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"To enrich lives through effective and caring service"

REVISED

May 14, 2013

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

REQUEST FOR APPROVAL OF AGREEMENTS WITH SPRINT NEXTEL CORPORATION AND HARRIS CORPORATION TO RE-BAND AND UPGRADE THE COUNTYWIDE INTEGRATED RADIO SYSTEM (CWIRS) (ALL DISTRICTS – 3 VOTES)

SUBJECT

Approval of agreements with Sprint Nextel Corporation (Sprint) and Harris Corporation (Harris) to upgrade and re-band the Countywide Integrated Radio System (CWIRS) per the Federal Communication Commission's (FCC) nationwide mandatory re-banding program for 800 megahertz (MHz) radio channels. This \$20 million settlement agreement, fully funded through Sprint, will allow the Internal Services Department (ISD) to comply with the FCC mandates, as well as to upgrade CWIRS to meet the Association of Public-Safety Communication Officials (APCO) national Project 25 (P25) land mobile radio standard, at no cost to the County.

IT IS RECOMMENDED THAT YOUR BOARD:

1. Find that the proposed project is categorically exempt from the California Environmental Quality Act for the reasons stated in this letter and in the record of the project.
2. Approve and instruct the Chairman to sign the Frequency Reconfiguration Agreement (Attachment I) with Sprint, which provides \$20 million and certain radio equipment and infrastructure hardware to replace and upgrade CWIRS as part of the FCC's frequency re-banding mandate.
3. Approve and instruct the Chairman to sign the 800 MHz System Rebanding Agreement (Attachment II) with Harris, under which Harris will provide radio reconfiguration services to move CWIRS to new radio frequencies using the nationwide P25 radio standard at no cost to the County.
4. Authorize the Director of ISD or his designee to exercise change orders if needed with Harris, not to exceed an aggregate maximum of \$250,000, and to add and delete facilities, approve necessary changes to scope of services, and execute applicable contract amendments should the original contracting entity merge, be acquired, or otherwise have a change of entity.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

Approval of the recommended actions will find the proposed CWIRS re-banding project exempt from the California Environmental Quality Act (CEQA) and allow ISD to implement the proposed project.

CWIRS is a County radio system used for mobile communications by a number of departments, including Health Services, Public Works, Probation, Animal Care & Control and ISD. In addition to serving the day-to-day operations of its user departments, CWIRS is the County's primary disaster recovery mobile communications system in a major emergency incident.

About fifteen years ago, public agencies like the County using the 800 MHz radio band frequency started to experience radio interference caused by adjacent frequency use by Nextel Communications, Inc. (now Sprint). To eliminate this interference and allocate frequencies for more efficient use, the FCC issued orders in 2004 requiring all 800 MHz licensees, including the County, to move to new frequencies. The FCC also ordered Sprint to provide funding to all licensees for such reconfiguration.

Reconfiguration involves re-tuning (re-banding) system hardware (e.g., consoles, base stations, mobile and portable radios) and system software to use new frequencies, but does not require civil engineering or construction.

Under FCC jurisdiction, reconfiguration is a two phase project. Phase 1 is planning and design. Phase 2 is implementation. Each phase requires (1) a funding agreement with Sprint to commit funds as mandated by the FCC, and (2) a services agreement with our existing CWIRS equipment vendor, Harris (formerly M/A-COM). On January 11, 2007, we notified your Board of ISD's intent to enter sole source negotiations with M/A-COM/Harris for agreements related to both the planning and implementation of this project.

Your Board approved Phase I agreements on February 20, 2007, with delegated authority to the ISD director. As previously reported to your Board, Phase 1 was completed in October 2008, when Harris delivered an implementation plan and proposal to ISD.

The start of work on Phase 2 was delayed until June 2012, pending the conclusion of a treaty with Mexico for radio frequency allocations. Since then, ISD has provided periodic status reports to your Board, most recently on April 9, 2013, describing the status of negotiations with Sprint and Harris, including the "opt-out" settlement with Sprint.

The Opt-Out Upgrade

Sprint has offered an "opt-out" settlement, whereby a three-way accord is established among the County, Sprint, and the FCC, and all parties agree to settlement payments. This settlement provides the County with flexibility to upgrade CWIRS to meet the national P25 land mobile radio standard. P25 will enhance system compatibility and interoperability with other and future state-of-the-art public safety/service communication systems, including the planned Los Angeles Regional Interoperable Communications System (LA-RICS), the City of Los Angeles, and the Port of Los Angeles.

The Sprint offer includes a \$20 million settlement funding to re-band and simultaneously upgrade CWIRS. Additionally, Sprint offered to provide 6,247 new P25-ready radios, and Harris, our current CWIRS contractor, will upgrade 1,494 existing radios to the P-25 standard at no cost to the County.

Sprint's offer requires County acceptance by June 1, 2013. This time frame will provide Sprint with access to County-relinquished radio frequencies within 28 months after contract execution, pursuant to a mutually agreed upon schedule.

Implementation of Strategic Plan Goals

The recommended contracts support County Strategic Plan Goals Number 1 for Operational Effectiveness, by providing timely delivery of customer oriented and efficient public services, and Goal Number 2 for Fiscal Sustainability, as the County will be able to upgrade its aged CWIRS radio system to current P25 standards without contributing general fund monies.

FISCAL IMPACT/FINANCING

Under the Frequency Reconfiguration Agreement (Attachment I), Sprint will provide \$20 million to replace and upgrade CWIRS as part of the FCC's frequency re-banding mandate, including the following cost estimates:

System upgrade cost to be paid to Harris	\$17.3 million
System upgrade cost to be paid to the County	\$2.5 million
<u>Legal services to be paid to the County's outside counsel</u>	<u>\$0.2 million</u>
 Total	 \$20 million

ISD implementation costs totaling \$2.5 million will be fully reimbursed by Sprint, requiring no net County cost. ISD will request additional appropriation required to support this project during the Final Changes phase of the Fiscal Year 2013-14 budget process, and in future fiscal years. For project contingencies, ISD seeks authority to execute change orders up to a maximum of \$250,000 over the project term. Such change orders, if any, will be funded from the \$2.5 million identified for County costs.

Under the agreement, the County will receive cost reimbursement in two parts: the first \$1.25 million after the agreement is executed, and the remaining \$1.25 million after the County relinquishes its 800 MHz radio frequencies and related radio equipment to Sprint.

The payment schedule to Harris is described in the 800 MHz System Rebanding Agreement (Attachment II). Payments are linked to Harris' successful completion of tasks described in the Statement of Work. The payment schedule for Harris retains \$2.5 million pending final system acceptance by the County.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The 800 MHz System Rebanding Agreement with Harris includes a Statement of Work as Attachment B to that Agreement. The Statement of Work describes the project technical details, including: radio system coverage overview; planned migration and cutover; current and proposed radio frequencies; equipment description for each site/area; the project team and responsibilities; reporting requirements and project schedule; site power and cooling requirements; antenna system designs and equipment installation; user equipment description including portable radios; acceptance testing details; training for maintenance and operation of systems and radios, equipment removal description; etc. The project timeline is expected to be approximately 28 months.

The FCC has created a Transition Administrator (TA) to administer the 800 MHz re-banding process and review re-banding expenditures for compliance with FCC rules. The TA works directly with all frequency licensees affected by radio band reconfiguration. Upon reviewing and approving the Frequency Reconfiguration Agreement between the County and Sprint, the TA will issue a "Letter of Authorization" to Sprint to proceed with the agreement.

The County retained the law firm of Schulman, Rogers, Gandal, Pordy & Ecker, P.A. as outside telecommunications counsel to assist in negotiating and memorializing the recommended contracts. A confidential opinion memo from Alan S. Tilles, the Chairman of the Firm's Telecommunications Department, is submitted to the Board contemporaneously with this filing. The recommended contracts have been approved as to form by County Counsel.

ENVIRONMENTAL DOCUMENTATION

The proposed Project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA). The Project, which consists of execution of an agreement for, among other things, the replacement of radio system equipment at existing locations, is within a class of projects that have been determined not to have a significant effect of on the environment in that it meets criteria set forth in Section 15302(c) of the State CEQA Guidelines and Class 2(e) of the County's Environmental Document Reporting procedures and Guidelines, Appendix G. Replacement equipment will have the same purpose and capacity as the equipment replaced and will be located on the same site. In addition, there are no cumulative impacts, unusual circumstances or other limiting factors that would make the exemption inapplicable based on the project records.

Upon your Board's approval of the proposed Project, ISD will file a Notice of Exemption with the County Clerk in accordance with Section 15062 of the State CEQA Guidelines.

CONTRACTING PROCESS

In accordance with your Board's policy, on January 11, 2007, ISD notified the Board of ISD's intent to enter into sole source negotiations with M/A-COM (now Harris) for this project.

CWIRS was acquired in 1993 as a result of a County competitive bid process, resulting in the implementation of a radio system designed by Harris and manufactured by Ericsson GE, a predecessor to M/A-COM and ultimately Harris. CWIRS uses components, including software, that are proprietary to Harris. They cannot be substituted without replacing the entire system,

which would result in significant cost to the County. Equipment replacement and component or software upgrades must match and interoperate with the existing system.

The agreements are exempt from Proposition A, as the services are of an extraordinary professional, technical and/or temporary nature (County Code 2.121.250(B)(3)), and therefore are not subject to the Living Wage Program (County Code 2.201).

The agreements are also based upon standard agreement forms developed by Sprint and Harris, which are approved by the FCC and unique to the re-banding program. Accordingly, standard County program clauses are not applicable.

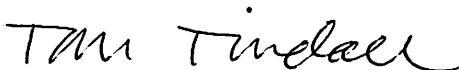
IMPACT ON CURRENT SERVICES (OR PROJECTS)

The Harris re-banding approach will maintain existing CWIRS radio functionality during the implementation period until users are migrated to the P25 infrastructure. All activity will be coordinated with departments to ensure that there is minimal or no impact on operations. There is no employee impact as a result of these agreements.

CONCLUSION

Approval of the contracts will allow the County to upgrade and re-band its CWIRS radio system to current P25 nationwide standards with no net County cost. This project will ensure the continued viability of CWIRS for countywide radio communications in future years, and will provide system compatibility and interoperability with other state-of-the-art public safety/service communication systems, including the planned LA-RICS.

Respectfully submitted,



TOM TINDALL
DIRECTOR, ISD

TT:JJ:JLG:RK
Attachments (2)

c: Chief Executive Officer (Fujioka, Simdjian)
County Counsel
Chief Information Officer

FREQUENCY RECONFIGURATION AGREEMENT

THIS FREQUENCY RECONFIGURATION AGREEMENT (this "Agreement") is made as of this ____ day of _____, 2013 ("Effective Date"), by and between **Los Angeles, County of**, a governmental entity of the State of California ("Incumbent" or "Licensee"), and **Nextel West Corp.** ("Nextel"), a wholly owned indirect subsidiary of Sprint Nextel Corp., a Kansas corporation (each is referred to in this Agreement as a "Party" and collectively as the "Parties").

RECITALS

- A. On August 6, 2004, the Federal Communications Commission ("FCC") issued a Report and Order that modified its rules governing the 800 MHz band. The purpose of the Order was to reconfigure the 800 MHz band to minimize harmful interference to public safety radio communications systems in the band ("Reconfiguration").
- B. On December 22, 2004, the FCC issued a Supplemental Order and Order on Reconsideration. The August 6, 2004 and December 22, 2004 FCC orders, and any supplemental FCC Orders in the Reconfiguration proceeding or subsequent actions after the date of this Agreement, are collectively referred to as the "Order."
- C. Pursuant to the Order, Incumbent and Nextel are licensed on frequency allocations subject to Reconfiguration.
- D. Pursuant to the Order, Nextel will pay Incumbent, or on Incumbent's behalf, an amount to effect a Reconfiguration of Incumbent's affected frequency allocations ("Reconfiguration Cost"). Incumbent will certify to the Transition Administrator appointed pursuant to the Order (the "Transition Administrator") that the Reconfiguration Cost is the minimum cost necessary to accomplish rebanding in a reasonable, prudent, and timely manner in order to provide comparable facilities.
- E. Incumbent's existing 800 MHz system operates on the Incumbent Frequencies (as defined below) and will not be retuned but will instead be replaced with an Upgrade System that will operate on the Replacement Frequencies (as defined below) (the "Upgrade System"). The Parties have agreed to coordinate the Upgrade System with Incumbent's rebanding obligations. The reimbursable amount to Incumbent to effect the Upgrade System is based on the Reconfiguration Cost Incumbent would have incurred had Incumbent retuned the Incumbent Frequencies to the Replacement Frequencies in accordance with the Order. Incumbent will migrate from the Los Angeles County's EDACS system to a proposed P25 system.

FOR GOOD AND VALUABLE CONSIDERATION, THE RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED, THE PARTIES AGREE AS FOLLOWS:

AGREEMENT

1. **Frequencies to be Reconfigured:** Incumbent is the licensee under the license(s) granted by the FCC identified in Schedule A (the "Incumbent Licenses") for the operation of certain 800 MHz frequencies at the locations identified on Schedule A (the "Incumbent Frequencies"). Nextel, including its subsidiaries or affiliates, is the licensee under license(s) granted by the FCC (the "Nextel Licenses") for the operation of Specialized Mobile Radio ("SMR") systems on the frequencies and at the locations identified in Schedule B (the "Replacement Frequencies"). The

Replacement Frequencies to be identified on Schedule B, will be added to the Agreement by amendment upon receipt and acceptance by the Incumbent of the Frequency Proposal Reports from the Transition Administrator. Pursuant to the Order, Incumbent must relinquish the Incumbent Frequencies and relocate its system to the Replacement Frequencies.

2. Frequency Reconfiguration Process:

(a) On or before the Closing Date (as defined below) (i) Nextel or Incumbent will cause the modification of the Incumbent Licenses to add the Replacement Frequencies or Nextel will cause the creation of a new FCC license for Incumbent that includes the Replacement Frequencies; (ii) Incumbent will cause the assignment of the Incumbent Frequencies to Nextel or will cause the deletion of the Incumbent Frequencies from the Incumbent Licenses following Reconfiguration of Incumbent's system; and (iii) Nextel will cause the modification and/or cancellation of the FCC licenses it holds for the operation of 800 MHz frequencies that are co-channels of the Replacement Frequencies, to the extent required to meet the technical short-spacing requirements of Section 90.621(b) of the FCC's Rules, 47 C.F.R. § 90.621(b), as such rule may be amended from time to time by the FCC.

(b) The parties agree that Nextel and the Incumbent (as appropriate) will make the FCC assignment filings for the Replacement Frequencies on a future date to be determined by the parties through mutual agreement, as provided in Section 5. The Parties agree to notify Nextel and the Incumbent (as appropriate) of the FCC assignment filings in accordance with the Notice provision of this Agreement.

3. Reconfiguration Costs:

(a) Acknowledgement of Obligations. Incumbent agrees that:

(i) the cost estimate set forth in Schedule C (the "Cost Estimate") and the equipment set forth on Schedule D, sets forth all of the work required to reconfigure Incumbent's existing facilities to comparable facilities that would operate on the Replacement Frequencies in the absence of the Upgrade System;

(ii) Upon Nextel's payment in accordance with this Agreement, Nextel shall be deemed to have satisfied its obligations under the Order to pay the cost of relocating Incumbent's system from the Incumbent Frequencies to the Replacement Frequencies as though the work contemplated by the Cost Estimate, in the absence of the Upgrade System, had been performed in accordance with this Agreement; and

(iii) Incumbent acknowledges that Nextel's payment obligations under this Agreement to allow Incumbent to conduct the Upgrade System shall not exceed the Reconfiguration Cost set forth on Schedule C.

(iv) Compliance with Transition Administrator Upgrade Policy. The Parties acknowledge that the transactions contemplated herein satisfy the requirements of the Transition Administrator Upgrade Policy. In accordance therewith:

A. Incremental Funding Commitment. The Reconfiguration Cost set forth on Schedule C shall be the sole source of funding needed to accomplish the Incumbent's Upgrade System. If any further funds are required for the installation of the Upgrade System, although none are presently anticipated to be required, such funds will be approved and allocated

by Incumbent following the Transition Administrator's approval of this Agreement but prior to the commencement date of physical retuning.

B. Vendor Resources Available. Incumbent warrants that all Vendors involved in the Upgrade System have committed necessary resources to accomplishing the Upgrade System in a timely manner, and that completion of the Upgrade System will in no case exceed the time it would have taken Incumbent to reconfigure its existing 800 MHz system.

C. Use of Reconfiguration Cost. Incumbent warrants that the Reconfiguration Cost paid by Nextel to Incumbent shall be used for the purposes of effecting the Upgrade System, and for no other purpose.

D. Representation at Closing. Incumbent will, at Closing, confirm in writing that the Reconfiguration Cost paid by Nextel under this Agreement was allocated in accordance with Section 3(a)(iv)(C) of this Agreement.

E. Documentation of Reconfiguration Cost. Incumbent shall, in accordance with the terms of Section 3(b)(i) of this Agreement, provide such documentation as may be required to establish that the Reconfiguration Cost paid under this Agreement was used in accordance with Section 3(a)(iv)(C) of this Agreement.

F. Refund for Overpayment. Incumbent warrants that it will refund to Nextel, as described in Section 3(b)(i) of this FRA, any amounts paid by Nextel that exceed the Reconfiguration Cost.

G. Comparability of Facilities. Incumbent will certify that following the Upgrade System, Incumbent's resulting facilities shall be deemed comparable as the term "comparable" is defined in the FCC's rules and the Order. Incumbent shall execute such closing documentation as shall be requested by Nextel and required by either the TA or the Commission to certify the comparability of Incumbent's facilities following the System Upgrade.

H. Supplemental Information. Information required for compliance with the TA Upgrade Policy is detailed on the attached Exhibit C and shall be incorporated into this Agreement.

(b) Payment Terms. In order to facilitate the Incumbent's transition to the Replacement Frequencies, Nextel will pay the costs incurred to reconfigure Incumbent's system in an amount not to exceed the Cost Estimate. Nextel will make payments in accordance with the payment terms identified on Schedule C and as set forth below, for both payments made directly to Incumbent and payments made on behalf of Incumbent directly to each third party vendor identified on the Cost Estimate ("Vendor").

(i) Within thirty (30) days of completion of Incumbent's Reconfiguration/Upgrade System and prior to the Reconciliation Date (as defined below), Incumbent will submit to Nextel all documentation demonstrating that the actual costs that Incumbent reasonably incurred or paid to other entities as part of the Upgrade System ("Actual Costs") are equal to or exceed the Reconfiguration Cost. The documentation of Actual Costs required by Nextel from Incumbent may include but is not limited to the following: (A) invoices for Actual Costs that are associated with the Upgrade System; (B) receipts substantiating the Actual Costs including receipts for any travel expenses incurred by Incumbent such as hotel

invoices, airfare receipts, etc.; (C) Incumbent's individual employee work orders, time sheets or associated general ledger records specifying the name of the person or employee performing work for Incumbent, the date work was performed, the hours worked and a description of the activity performed; (D) inventory lists and certified statements of the numbers of tasks completed for reconfiguration; and/or (E) the applicable Exhibit B internal labor certifications. Incumbent will only be required to show documentation of Actual Costs for the Upgrade System up to the amount identified on Schedule C. Upon receipt by Nextel of the documentation for Actual Costs of the Upgrade System and subject to Section 20(b), Nextel and Incumbent will reconcile the Actual Costs against the payments made by Nextel to Incumbent and Vendor(s) and the Parties will agree upon the amount of any additional payments due to Incumbent or any refunds due to Nextel. The effective date of agreement on reconciliation of Actual Costs, and Replaced Equipment (as defined in Section 20) and receipt by Nextel of the Reconciliation Statement signed by Incumbent and Incumbent's counsel is the "Reconciliation Date." Should the Parties be unable to agree upon the amount of the additional payments, the Parties shall follow the dispute resolution procedures detailed in the FCC Order.

(ii) Any additional payments due to Incumbent from Nextel will be disbursed to Incumbent within thirty (30) days of the Reconciliation Date, provided the additional payments do not result from Actual Costs that exceed the Cost Estimate. Any refunds due from the Incumbent to Nextel will be made within thirty (30) days of the Reconciliation Date.

(iii) Prior to the Closing Date, Nextel will pay on behalf of itself and Incumbent, both Parties' applicable sales and transfer taxes, if any, and all FCC fees in connection with the preparation and filing of the necessary FCC applications for the assignment(s) described in Section 2 of this Agreement.

4. **Reconfiguration Equipment.** If needed in order to facilitate the Incumbent's transition to the Replacement Frequencies, Nextel will loan any equipment identified in Schedule D as "Loaned Reconfiguration Equipment" and will provide any equipment identified in Schedule D as "Replacement Equipment". Nextel will deliver any Loaned Reconfiguration Equipment to Incumbent in accordance with Schedule D. Incumbent will fax to Nextel a bill of lading associated with each shipment of Loaned Reconfiguration Equipment and Replacement Equipment signed by an authorized representative of Incumbent acknowledging receipt of the Loaned Reconfiguration Equipment and Replacement Equipment in good working order, after a reasonable period of time for Incumbent to inspect the Loaned Reconfiguration Equipment and/or Replacement Equipment. Any Loaned Reconfiguration Equipment will be returned to Nextel by Incumbent prior to the Reconciliation Date.

5. **Retuning Cooperation:**

(a) The Parties acknowledge that the number of frequencies and locations covered by this Agreement will require the Parties to cooperate closely in performing their respective reconfiguration activities. The Parties agree that: (i) as of the Effective Date, the Incumbent may begin the reconfiguration of its subscriber units, in accordance with the appropriate sections of Schedule C and Schedule D, (ii) Incumbent may commence such other activities associated with the reconfiguration of its system as further detailed on Schedule C as of the Effective Date; and (iii) the Parties will agree on a schedule to make the FCC filings, clear the Replacement Frequencies and decommission the Incumbent Frequencies (the "Schedule"). Depending on the timing of the adoption of this Schedule, it may require an Amendment to this Agreement, but in any event the Parties agree to adopt the Schedule no later than: (a) sixty (60) days from the Effective Date of this Agreement, or (b) pursuant to a Schedule agreed upon at a

TA scheduled "Implementation Planning Session" that includes the Incumbent's system, provided the Implementation Planning Session has been scheduled by the TA prior to the expiration of 60 days from the Effective Date of this Agreement (provided, however, in the event the Implementation Planning Session is not scheduled within the expiration of 60 days from the Effective Date of this Agreement, this subsection (b) will be preserved and the Parties will negotiate an Amendment to this Agreement), or (c) such other date as the FCC may require (the "Scheduling Period"). Notwithstanding the aforementioned, in the event the completion date in the Schedule for the reconfiguration of Incumbent's system extends beyond the completion date for such tasks in Incumbent's proposed implementation timetable (as submitted by Incumbent to the FCC in accordance with the Order), the completion date(s) in the Schedule may be subject to FCC approval. If by the end of the Scheduling Period, no agreement on the Schedule has been reached by the Parties, the Parties will jointly seek resolution in accordance with the dispute resolution provisions of the Order, including dispute resolution procedures adopted by the Transition Administrator; as they may be amended from time to time. Nothing in this Section shall prohibit the Incumbent from beginning work immediately on replacement of the subscriber units and/or subscriber software programming.

(b) Notwithstanding any provisions of the Agreement to the contrary, Incumbent expressly agrees to use reasonable efforts (absent any extraordinary or unforeseen events that would result in a delay and require a change notice if the Incumbent had rebanded its existing system in the normal course) during Incumbent's implementation of its Upgrade System, to provide written notice to Nextel that: 1) all non-NPSPAC channels have been cleared upon ninety (90) days written notice from Nextel, however, Incumbent shall not be required to clear the non-NPSPAC channels prior to twelve (12) months after the Effective Date; and 2) all of the Incumbent Frequencies have been cleared within twenty-eight (28) months of the Effective Date. Nextel and Incumbent agree to cooperate with one another to effectuate the foregoing. Incumbent agrees to promptly notify Nextel in writing of any issues regarding performance of the release of any frequencies contemplated herein. The Parties further agree that in the event the new NPSPAC Replacement Frequencies have not been cleared by Mexican licensees which prevents Incumbent from cutting over to the new NPSPAC Replacement Frequencies, then the dates established above for Incumbent to clear its NPSPAC channels shall be extended by the additional length of time required for Mexican licensees to clear the new NPSPAC Replacement Frequencies.

6. **Representations and Warranties:** Each Party represents and warrants to the other as follows:

(i) it is duly organized, validly existing and in good standing under the laws of the state of its incorporation;

(ii) this Agreement has been duly authorized and approved by all required organizational action of the Party;

(iii) neither the execution and delivery of this Agreement nor the consummation of the transactions contemplated by this Agreement will conflict with, or result in any material violation or default under, any term of its articles of incorporation, by-laws or other organizational documents or any agreement, mortgage, indenture, license, permit, lease, encumbrance or other instrument, judgment, decree, order, law or regulation by which it is bound;

(iv) it is the lawful and exclusive FCC licensee of its respective license(s) described in this Agreement, such licenses are valid and in good standing with the FCC, and it has the authority to request the FCC to assign, modify or cancel such licenses;

(v) to the best of its knowledge, there is no pending or threatened action or claim that would have the possible effect of enjoining or preventing the consummation of this Agreement or awarding a third party damages on account of this Agreement; and

(vi) to the best of its knowledge, all information provided to the other Party concerning the transactions contemplated by this Agreement is true and complete.

All representations and warranties made in this Agreement shall survive the Closing Date (defined below) for two (2) years.

7. **Covenants:** From the Effective Date until the Closing Date (defined below), each Party will promptly notify the other Party upon becoming aware of any pending or threatened action by the FCC or any other governmental entity or third party to suspend, revoke, terminate or challenge any license described in this Agreement or to investigate the construction, operation or loading of any system authorized under such licenses. From the Effective Date until the Closing Date, Incumbent will not enter into any agreement resulting in, or otherwise cause, the encumbrance of any license for the Incumbent Frequencies, and Nextel will not enter into any agreement resulting in, or otherwise cause, the encumbrance of any of the Replacement Frequencies.

8. **Changes:**

- a. Incumbent hereby expressly agrees that the Cost Estimate sets forth a not-to-exceed amount that Nextel will pay to or on behalf of Incumbent and any additional costs needed to achieve the Upgrade System are the sole responsibility of Incumbent. In accordance therewith, Incumbent shall neither submit to Nextel a Change Notice (as defined hereinafter) for a proposed increase in the Cost Estimate nor seek reimbursement from Nextel of any proposed cost increases, if any, resulting from the Upgrade System. Further, Incumbent will submit a Change Notice to the other Parties if and only if the limited circumstances identified in Section 8(b) or Section 8(c) arise but in no event will such a Change Notice contain a proposed increase in the Cost Estimate.
- b. The Parties acknowledge that as Incumbent's Upgrade System proceeds in accordance with this Agreement, a possibility exists for the discovery of additional subscriber units by Incumbent. If Incumbent believes that a change to the Replacement Equipment and/or the Replaced Equipment as shown on Schedule D is necessary solely due to the discovery (during the Upgrade System) of additional subscriber units that would have been subject to replacement, Incumbent will promptly notify the other Parties in writing. Such written notice (the "Change Notice") shall set forth (i) a description of the scope of the change believed to be necessary and (ii) an estimate of the time required to configure Incumbent's existing facilities to operate on the Replacement Frequencies. The Parties agree that their review of any such needed changes must be performed expeditiously to keep the work on schedule and that they will provide sufficient staff to manage changes. A Party receiving a Change Notice shall immediately perform its own analysis of the need for and scope of the change and its impact on the Agreement and schedule and negotiate the change in good faith with the

other Parties. After all Parties have agreed upon a change to this Agreement, they shall prepare a proposed written amendment to this Agreement pursuant to Section 25 (Amendments), and submit to the Transition Administrator a copy of the proposed amendment together with a written request for its approval. Such request shall be accompanied by reasonable documentation supporting the need for and scope of the change and in the time required to reconfigure incumbent's existing facilities to operate on the Replacement Frequencies.

- c. If any Party believes that a change to this Agreement is required due to a factual error in this Agreement (such as, a modification to Section 23, Notices, or Schedules A or B) that does not affect the Cost Estimate of this Agreement, such Party will promptly submit a Change Notice to the other Parties.
- d. Incumbent is responsible for all changes necessary as it relates to work performed by a Vendor on behalf of Incumbent. No change to this Agreement or the time required to reconfigure Incumbent's existing facilities to operate on the Replacement Frequencies shall become effective until the Parties have signed an amendment incorporating such approved change into this Agreement pursuant to Section 25 and the Transition Administrator has approved the amendment in writing.

9. **Closing:** The closing ("Closing") of the transactions contemplated by this Agreement will take place within thirty (30) days after (i) FCC approval of the assignment of the Incumbent Frequencies to Nextel and/or deletion of the Incumbent Frequencies from the Incumbent Licenses, (ii) FCC approval of the modification to add the Replacement Frequencies to the Incumbent Licenses with no material conditions or the creation of a new license for Incumbent with no material conditions that includes the Replacement Frequencies, (iii) notification by Incumbent to Nextel that the Incumbent Licenses have been cleared of all Incumbent users pursuant to Section 5 of this Agreement, (iv) delivery by Incumbent of documentation required by Section 3 to substantiate the Actual Costs for the Upgrade System and signing by Incumbent and Incumbent's counsel and delivery to Nextel of the Reconciliation Statement and other documents required to complete the Reconciliation similar to those identified on Exhibit B, if Incumbent submits internal costs as part of its reimbursement documentation, (v) FCC approval of the modification and/or cancellation of the FCC licenses Nextel holds for the operation of 800 MHz frequencies that are co-channels of the Replacement Frequencies, to the extent required to meet the technical short-spacing requirements of Section 90.621(b) of the FCC's Rules, 47 C.F.R. § 90.621(b), as such rule may be amended from time to time by the FCC, (vi) the refund to Nextel or payment to Incumbent as described in Section 3(b)(ii), (if applicable) and (vii) the satisfaction of all other conditions specified in this Agreement (the "Closing Date").

10. **Closing Conditions:** Performance of each Party's Closing obligations is subject to satisfaction of the following conditions (except to the extent expressly waived in writing by the other Party):

(a) the continued truth and accuracy of the other Party's representations and warranties set forth in this Agreement;

(b) all of the covenants of the other Party described in this Agreement are performed in all material respects; and

(c) execution and delivery by the other Party of Closing documents as well as any other Closing instruments and documents either Party or its counsel may reasonably request. Incumbent will execute and deliver to Nextel a closing certification required by the Transition Administrator.

(d) The Parties will cooperate in good faith and exercise their reasonable best efforts to finalize and execute these instruments and documents on or prior to the Closing Date in order to effect the Reconfiguration contemplated.

11. **Review Rights:** Incumbent agrees to maintain records and other supporting evidence related to the costs that Incumbent has expended in connection with the Upgrade System contemplated by this Agreement and that Nextel has paid or will pay to Incumbent pursuant to this Agreement. Incumbent agrees to maintain such records and make them reasonably available to the Transition Administrator for review or reproduction until eighteen (18) months after the date of Incumbent's executed Completion Certification required by this Agreement or for a longer period if Incumbent, for its own purposes, retains such records for a longer period of time. As used in this provision, "records" includes books, documents, accounting procedures and practices and other data regardless of type and regardless of whether such items are in written form, in the form of computer data or in any other form. Nextel shall be responsible for post-Closing audit expenses of the Incumbent, except those expenses resulting from fraudulent activity on behalf of the Incumbent. To the extent that any post-Closing audit determines that Nextel paid a third-party vendor more than provided for under the FCC Order, Nextel's sole remedy is to seek reimbursement directly from the third-party vendor, unless such overpayment was the result of fraud or negligence of the Incumbent.

12. **Excluded Assets; No Assumption of Liabilities:** Nothing in this Agreement should be construed as a transfer or assignment from either Party to the other Party of any assets (including FCC licenses) except as expressly set forth in this Agreement. Other than as expressly provided in this Agreement, neither Party is obligated to assign and transfer to the other Party any asset, tangible or intangible, nor is either Party entitled to assume any asset, tangible or intangible. Neither Party is assuming, nor is either Party responsible for, any liabilities or obligations of the other Party arising out of or in connection with the other Party's licenses (or related systems and facilities) that are the subject of this Agreement.

13. **Confidentiality:** Except as otherwise provided under the California Constitution and the California Public Records Act, the terms of this Agreement and any proprietary, non-public information regarding the Incumbent Frequencies, Replacement Frequencies, Nextel's business and Incumbent's business must be kept confidential by the Parties and their employees, shareholders, agents, attorneys and accountants (collectively, "Agents"), which confidentiality will survive the Closing or termination of this Agreement for a period of two (2) years. The Parties may make disclosures: (i) as required by law, (ii) to the Transition Administrator, (iii) to their Agents, (iv) to a manufacturer of Replacement Equipment to allow for the provisioning of that equipment to Incumbent (but only to the extent such disclosure specifically relates to that manufacturer's equipment as identified on Schedule D), and (v) to a Vendor (but only to the extent that such disclosure specifically relates to that Vendor's work and costs under this Agreement (as identified on Schedule C) as required to perform obligations under this Agreement. Nextel, Incumbent and their respective Agents may make disclosures regarding the terms of this Agreement to other public safety licensees and their Agents in accordance with the FCC Order, WT Docket No. 02-55, adopted January 8, 2007. Each Party will cause all of its Agents to honor the provisions of this Section.

14. **Cooperation:** The Parties will cooperate with each other and the Transition Administrator with respect to the Reconfiguration work contemplated by this Agreement.

Without limiting the foregoing obligations, the Parties agree to cooperate in the preparation of any applications required to be filed with the FCC, and Incumbent agrees to provide reasonable access to its facilities so that the Transition Administrator may comply with any audit obligations and so any Reconfiguration work contemplated by this Agreement may be performed in accordance with the Cost Estimate and performance schedule. If a Party is subject to a denial of FCC benefits for delinquent non-tax debts owed to the FCC that would prevent or delay the timely processing of any FCC applications, such Party shall cure such delinquency in an expeditious manner and at its sole expense.

15. **Intentionally Deleted.**

16. **Disputes:** The Parties agree that any dispute related to the Replacement Frequencies, Nextel's obligation to pay any cost of the Reconfiguration of Incumbent's system contemplated by this Agreement, or the comparability of Incumbent's reconfigured system to Incumbent's existing system prior to Reconfiguration, which is not resolved by mutual agreement, shall be resolved in accordance with the dispute resolution provisions of the Order, including the dispute resolution procedures adopted by the Transition Administrator, as they may be amended from time to time.

17. **No Gratuities:** No gift, gratuity, credit, thing of value or compensation of any kind shall be offered or provided by Incumbent or Nextel, directly or indirectly, to any officer, employee or official of either Party for the purpose of improperly obtaining or rewarding favorable treatment under this Agreement.

18. **Liens:** If any liens or security interests ("Liens") attach to any of Incumbent's facilities in favor of any Vendor or service provider that is performing any Reconfiguration work contemplated by this Agreement as a result of Nextel's breach of any obligation to make direct payment (not in dispute) to such Vendor or services provider, Nextel upon receipt of Notice from Incumbent will cooperate to remove any Liens.

19. **Vendor Performance Issues:** Incumbent will select and contract directly with any Vendor or service provider performing work required to reconfigure the Incumbent's existing facilities to operate on the Replacement Frequencies. Neither the Transition Administrator nor Nextel will be responsible for, or assume the risk of any failure of that Vendor to perform its obligations under any contract entered into between Incumbent and such Vendor in connection with the Reconfiguration contemplated by this Agreement. Incumbent shall require all Vendors to accomplish the Upgrade System in a timely manner.

20. **Replaced and Replacement Equipment:**

(a) If the reconfiguration of the Incumbent's existing facilities to operate on the Replacement Frequencies involves the replacement of any of Incumbent's existing equipment ("Replaced Equipment") with equipment provided by Nextel (as identified on Schedule D) or equipment the cost of which is being paid by Nextel pursuant to this Agreement as listed in Schedule C (collectively the "Replacement Equipment"), then (i) title to Replaced Equipment listed in Schedule D shall pass to Nextel at Closing free and clear of liens and any other encumbrances, and Incumbent shall execute such documentation as Nextel may reasonably request to transfer title to Nextel, (ii) title to Replacement Equipment provided by Nextel will pass to Incumbent at Closing and Nextel shall execute such documentation as Incumbent may reasonably request to transfer title to Incumbent free and clear of liens and any other encumbrances, and (iii) Incumbent shall deliver the Replaced Equipment to Nextel at Nextel's cost, pursuant to Nextel's shipment instructions, and prior to the Reconciliation Date.

(b) If Incumbent fails to return any item of the Replaced Equipment in working condition to Nextel, Incumbent must return to Nextel those items of the Replacement Equipment that would have replaced the Replaced Equipment not returned, in the same condition it was received (i.e. new for new or used for used), prior to the Reconciliation Date. If Incumbent fails to return any item of the Replaced Equipment in working condition to Nextel under this Section 20(b) and a Product Typical Value is set forth in Schedule E for the item of Replacement Equipment then either: (i) Nextel will deduct the Product Typical Value (as set forth in Schedule E) for those items of Replacement Equipment provided to replace the Replaced Equipment not returned to Nextel (including tax (if any) and shipping) (the "Nextel Equipment Refund") from the final payment due to Incumbent after the Reconciliation; (ii) Incumbent must pay Nextel the Nextel Equipment Refund for those items of Replacement Equipment not returned to Nextel in accordance with Section 3(b)(ii) (if no final payment is due to Incumbent); or (iii) Nextel will deduct the portion of the Nextel Equipment Refund up to the value of the final payment due to Incumbent and Incumbent must pay Nextel the remaining Nextel Equipment Refund not covered by the final payment in accordance with Section 3(b)(ii) (if the final payment due Incumbent is less than the Nextel Equipment Refund), or (iv) Incumbent may choose to purchase Comparable Equipment, defined below, from any source and send the equipment, along with adequate documentation, to Nextel prior to the Reconciliation Date. Comparable Equipment shall mean equipment of the same condition (e.g. new for new or used for used) and from the same manufacturer, that is the identical model and includes the same options and accessories as the Replacement Equipment provided by Nextel.

(c) In the event of a dispute between the Parties concerning a discrepancy of the number of units of Nextel Replaced Equipment returned to Nextel, or to the condition of the Nextel Replaced Equipment returned to Nextel, the Parties acknowledge and agree that, absent material evidence to the contrary as reasonably determined by Nextel, receipt by Nextel of an affidavit (signed by the person or persons authorized by Incumbent to pack the Nextel Replaced Equipment for return to Nextel) will be considered conclusive evidence of the return of the stated count and condition of the Nextel Replaced Equipment by Incumbent, provided, however that such affidavit: (1) indicates that the Nextel Replaced Equipment was packed in working condition by such authorized person by Incumbent, and (2) documents the model, options and accessories, serial numbers, and quantity of Nextel Replaced Equipment packed and shipped to Nextel. Nothing in this Section shall restrict or prevent either Party from resolving any disputes related to this Section in accordance with the terms of this Agreement.

21. **Termination**: This Agreement may be terminated and the transactions contemplated by this Agreement abandoned: (i) by mutual consent of the Parties provided in writing; (ii) for cause by either Party upon material breach of the other Party, following a thirty (30) day period for cure by the breaching Party following written notice of the breach; or (iii) by Nextel prior to Closing in the event of any Adverse Decision affecting the Order by any governmental entity of competent jurisdiction. For purposes of this Agreement, an "Adverse Decision affecting the Order" means an order, decree, opinion, report or any other form of decision by a governmental entity of competent jurisdiction that results, in whole or part, in a stay, remand, or reversal of the Order. In the event of termination, the Parties shall take all necessary action (including preparing and filing FCC documents) to return the *status quo ante* on the date of this Agreement. In the event of termination, Nextel shall pay all costs associated with the return to the *status quo ante*, as well as all Incumbent costs expended in the Agreement negotiations and implementation, except if such termination was due to an uncured material breach by Incumbent.

22. Intentionally Deleted

23. **Notices:** All notices and other communications under this Agreement must be in writing and will be deemed given (i) the same day if delivered personally or sent by facsimile; (ii) the next business day if sent by overnight delivery via a reliable express delivery service; or (iii) after five (5) business days if sent by certified mail, return receipt requested, postage prepaid. All notices are to be delivered to the Parties at the following addresses:

<p>If to Incumbent, to: Los Angeles, County of Information Technology Service Telecommunications Branch Radio Systems Division 1110 N. Eastern Avenue Los Angeles, CA 90063 Attn: Ian Telfer, P.E. Phone: (323) 267-3822 Fax: (323) 262-4607 Email: Itelfer@isd.lacounty.gov</p>	<p>If to Nextel, to: Nextel West Corp. c/o Sprint Nextel Corp. 12502 Sunrise Valley Drive 2nd floor, OPS II Bldg Reston, VA 20196 Attn: Heather P. Brown, Esq. Phone: (703) 433-4467 Fax: (703) 433-4483</p>
<p>With a copy that shall not constitute Notice:</p> <p>Office of the County Counsel 500 W. Temple Street, Rm 653 Los Angeles, CA 90012 Attn: Patrice Salseda, Senior Deputy</p> <p>Alan S. Tilles, Esquire Shulman Rogers Gandal Pordy & Ecker, P.A. 12505 Park Potomac Avenue, Sixth Floor Potomac, MD 20854 Phone: (301) 231-0930 Fax: (301) 230-2891</p>	<p>With a copy that shall not constitute Notice:</p> <p>Nextel Communications, Inc. 6575 The Corners Parkway Norcross, GA 30092 Attn: William Jenkins, VP Spectrum Resources Phone: (678) 823-6000 Fax: (678) 405-8252</p>

24. **Assignment:** This Agreement is binding upon and inures to the benefit of the Parties and their respective successors and permitted assigns. Either Party may assign this Agreement to any direct or indirect subsidiary or affiliate of the Party, upon delivery of written notice to the other Party; provided, however, that any direct or indirect subsidiary or affiliate of Nextel that assumes this Agreement, shall assume all of Nextel's obligations under this Agreement and shall be liable with respect to Nextel's obligations under this Agreement pursuant to the Order. Notwithstanding the foregoing, the obligation of Sprint Nextel Corp. to perform under the Order shall not be affected by any such assignment.

25. **Amendments:** This Agreement, including without limitation the scope of work contemplated hereby and the Estimated Cost thereof to be paid by Nextel, may be amended or modified only by a written instrument signed by authorized representatives of both Parties, provided, however, no amendment or modification to this Agreement shall become effective until approved by the Transition Administrator, or the FCC after an adverse decision by the Transition Administrator.

26. **Benefits:** This Agreement is for the benefit of the Parties and their successors and permitted assigns, and nothing in this Agreement gives or should be construed to give any legal

or equitable rights under this Agreement to any person or entity, other than (i) the successors and assigns of the Parties, and (ii) the Transition Administrator as specifically provided in this Agreement.

27. **Miscellaneous:** If any provision(s) of this Agreement is held in whole or part, to be invalid, void or unlawful by any administrative agency or court of competent jurisdiction, then such provision(s) will be deemed severable from the remainder of this Agreement, will in no way affect, impair or invalidate any other provision contained in the Agreement and the Parties will use their commercially reasonable efforts to amend this Agreement to make the unlawful provision compliant with applicable law so as to preserve the rights and obligations of the Parties. No action taken pursuant to this Agreement should be deemed to constitute a waiver of compliance with any representation, warranty, covenant or agreement contained in this Agreement and will not operate or be construed as a waiver of any subsequent breach, whether of a similar or dissimilar nature. This Agreement, together with the Schedules, constitutes the entire understanding and agreement between the Parties concerning the subject matter of this Agreement, and supersedes all prior oral or written agreements or understandings. This Agreement is governed by the laws of the State of California without regard to conflicts of law principles thereof. This Agreement may be executed in one or more counterparts, including by facsimile, which will be effective as original agreements of the Parties executing the counterpart. In consideration of the mutual consideration set forth herein, this Agreement is effective as a legally binding agreement between the Parties upon execution by the Parties.

28. **Additional Provisions:** Incumbent contemplates it will be able to license a modified simulcast frequency plan, using currently licensed spectrum and existing contours, in order to implement its Upgrade System. Incumbent acknowledges it is solely responsible for obtaining proper FCC licensing for the Upgrade System and that such licensing will not cause additional delays in clearing the Incumbent Frequencies and no Change Orders for additional expenses, related to obtaining proper FCC licensing for the Upgrade System, will be submitted to Nextel.

29. **Condition Precedent.** The Parties acknowledge that pursuant to Incumbent's execution protocol and legislative approval process, Nextel is executing this Agreement prior to formal approval by the Transition Administrator. The Parties acknowledge and agree that approval of the Transition Administrator is a condition precedent to the enforceability of this Agreement. This Agreement shall not be binding on either Party until approval of same by the Transition Administrator.

SIGNATURES ON FOLLOWING PAGE

In consideration of the mutual consideration set forth herein, this Agreement is effective as a legally binding agreement between the Parties upon execution by the Parties.

INCUMBENT:
Los Angeles, County of

NEXTEL:
Nextel West Corp.

By:_____

By:_____

Name:

Name:

Title:

Title:

In consideration of the mutual consideration set forth herein, this Agreement is effective as a legally binding agreement between the Parties upon execution by the Parties.

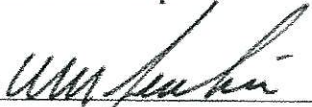
INCUMBENT:
Los Angeles, County of

By: _____

Name:

Title:

NEXTEL:
Nextel West Corp.

By:  _____

Name: WILLIAM M JENKINS
Title: AUTHORIZED SIGNATORY

In consideration of the mutual consideration set forth herein, this Agreement is effective as a legally binding agreement between the Parties upon execution by the Parties.

INCUMBENT:
Los Angeles, County of

NEXTEL:
Nextel West Corp.

By: _____

By: _____

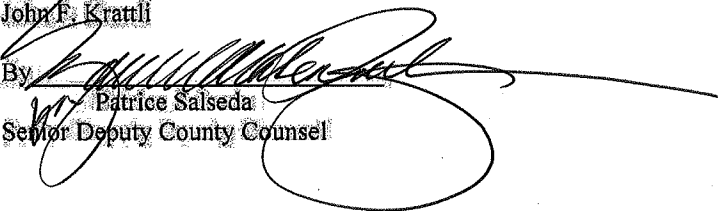
Name:

Name:

Title:

Title:

APPROVED AS TO FORM:
COUNTY COUNSEL
John F. Krattli

By: 
Patrice Salseda
Senior Deputy County Counsel

SCHEDULE A*

Incumbent Frequencies

Incumbent Name: Los Angeles, County of

The Incumbent Frequencies listed on this Schedule A, represent the transmit (base station) frequencies on the Incumbent Licenses. Although not specifically listed, all related mobile frequencies and/or station classes listed on the Incumbent Licenses are herein incorporated by reference.

Incumbent Assigns to Nextel:

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
KFO689	852.3125	Los Angeles, County of	CASTAIC, CA	34-31-7	118-35-39.3	11/19/13
KNER448	852.3125	Los Angeles, County of	WHITTIER, CA	34-1-2	118-0-52.2	3/19/22
WPDV629	852.3125	Los Angeles, County of	LONG BEACH, CA	33-46-59.1	118-11-48.2	11/29/13
WPDV632	852.3125	Los Angeles, County of	LOS ANGELES, CA	34-3-48	118-21-29.3	11/29/13
WPDV635	852.3125	Los Angeles, County of	LOS ANGELES, CA	34-3-46	118-12-13.3	11/29/13
WPDV636	852.3125	Los Angeles, County of	97 km radius	34-16-7	118-14-11.3	11/29/13
WPDV639	852.3125	Los Angeles, County of	LOS ANGELES, CA	34-1-28	118-16-26.3	11/29/13
WPRR761	852.3125	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-44-34.1	118-23-36.3	1/2/16
WZS448	852.3125	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	1/10/14
WNNM901	866.0875	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.25	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.275	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.3	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.5875	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.775	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.8	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.9375	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.225	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.25	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM901	867.275	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.725	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.775	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.8	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.0875	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.25	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.275	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.725	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.775	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.8	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM902	866.0625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.0875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.225	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.25	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.275	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.3	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.4375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.5875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.725	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.75	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.775	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.8	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.9375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.9625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.0625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.0875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM902	867.225	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.25	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.275	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.3	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.4375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.5875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.725	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.75	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.775	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.8	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.9375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.9625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.0625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.0875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.225	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.25	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.275	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.3	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.4375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.5875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.725	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.75	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.775	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.8	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM904	866.0875	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.25	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM904	866.275	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.3	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.5875	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.775	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.8	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.9375	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.225	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.25	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.275	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.725	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.775	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.8	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.0875	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.25	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.275	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.725	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.775	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.8	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM905	866.0625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.0875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.225	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.25	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.275	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.3	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.4375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.5875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM905	866.725	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.75	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.775	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.8	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.9375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.9625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.0625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.0875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.225	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.25	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.275	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.3	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.4375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.5875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.725	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.75	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.775	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.8	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.9375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.9625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.0625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.0875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.225	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.25	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.275	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.3	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM905	868.4375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.5875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.725	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.75	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.775	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.8	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM906	866.0875	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.25	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.275	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.3	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.5875	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.775	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.8	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.9375	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.225	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.25	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.275	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.725	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.775	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.8	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.0875	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.25	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.275	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.725	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.775	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.8	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM908	866.0625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.0875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.225	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.25	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.275	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.3	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.4375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.5875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.725	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.75	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.775	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.8	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.9375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.9625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.0625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.0875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.225	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.25	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.275	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.3	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.4375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.5875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.725	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.75	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.775	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.8	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM908	867.9375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.9625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.0625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.0875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.225	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.25	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.275	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.3	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.4375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.5875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.725	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.75	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.775	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.8	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM909	866.0625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.0875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.225	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.25	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.275	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.3	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.4375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.5875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.725	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.75	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.775	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.8	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM909	866.9375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.9625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.0625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.0875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.225	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.25	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.275	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.3	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.4375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.5875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.725	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.75	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.775	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.8	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.9375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.9625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.0625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.0875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.225	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.25	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.275	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.3	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.4375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.5875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.725	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.75	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM909	868.775	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.8	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM912	866.0625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.0875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.225	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.25	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.275	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.3	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.4375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.5875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.725	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.75	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.775	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.8	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.9375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.9625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.0625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.0875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.225	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.25	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.275	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.3	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.4375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.5875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.725	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.75	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM912	867.775	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.8	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.9375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.9625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.0625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.0875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.225	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.25	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.275	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.3	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.4375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.5875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.725	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.75	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.775	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.8	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNZY866	866.0875	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.25	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.275	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.3	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.5875	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.775	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.8	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.9375	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.225	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.25	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNZY866	867.275	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.725	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.775	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.8	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.0875	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.25	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.275	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.725	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.775	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.8	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY867	866.0625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.0875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.225	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.25	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.275	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.3	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.4375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.5875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.725	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.75	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.775	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.8	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.9375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.9625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.0625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.0875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNZY867	867.225	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.25	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.275	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.3	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.4375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.5875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.725	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.75	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.775	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.8	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.9375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.9625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.0625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.0875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.225	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.25	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.275	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.3	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.4375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.5875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.725	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.75	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.775	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.8	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WPHY854	866.0625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.0875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WPHY854	866.225	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.25	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.275	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.3	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.4375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.5875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.725	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.75	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.775	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.8	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.9375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.9625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.0625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.0875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.225	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.25	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.275	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.3	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.4375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.5875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.725	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.75	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.775	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.8	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.9375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.9625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WPHY854	868.0625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.0875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.225	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.25	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.275	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.3	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.4375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.5875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.725	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.75	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.775	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.8	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPJM560	866.95	Los Angeles, County of	Countywide: Los Angeles			7/29/21
WPJM560	867.075	Los Angeles, County of	Countywide: Los Angeles			7/29/21
WPJM560	867.95	Los Angeles, County of	Countywide: Los Angeles			7/29/21
WPJM560	868.075	Los Angeles, County of	Countywide: Los Angeles			7/29/21
WPPX548	866.225	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPPX548	866.725	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPPX548	867.3	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPPX548	868.225	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPPX548	868.75	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPTQ630	868.6125	Los Angeles, County of	LANCASTER, CA	34-42-6	117-49-24	11/26/21
WPTQ630	868.8375	Los Angeles, County of	LANCASTER, CA	34-42-6	117-49-24	11/26/21
WPTQ630	868.9125	Los Angeles, County of	LANCASTER, CA	34-42-6	117-49-24	11/26/21
WPUK518	866.9625	Los Angeles, County of	AVALON, CA	33-23-12.1	118-24-3.2	3/21/22
WPUK518	867.0625	Los Angeles, County of	AVALON, CA	33-23-12.1	118-24-3.2	3/21/22

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WPUK518	867.9625	Los Angeles, County of	AVALON, CA	33-23-12.1	118-24-3.2	3/21/22
WPUK518	868.0625	Los Angeles, County of	AVALON, CA	33-23-12.1	118-24-3.2	3/21/22
WQFY427	868.75	Los Angeles, County of	PALMDALE, CA	34-13-3	118-16-56	11/6/16
WQFY428	867.3	Los Angeles, County of	GORMAN, CA	34-48-13	118-48-53	11/6/16
WQGS660	866.2125	Los Angeles, County of	CHATSWORTH, CA	34-19-12	118-33-56	5/25/13
WQGS660	866.7125	Los Angeles, County of	CHATSWORTH, CA	34-19-12	118-33-56	5/25/13
WQGS660	867.3125	Los Angeles, County of	CHATSWORTH, CA	34-19-12	118-33-56	5/25/13
WQGS660	868.2125	Los Angeles, County of	CHATSWORTH, CA	34-19-12	118-33-56	5/25/13
WNNM907	821.0625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.0875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.225	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.25	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.275	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.3	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.4375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.5875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.725	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.75	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.775	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.8	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.9375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.9625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.0625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.0875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.225	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.25	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM907	822.275	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.3	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.4375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.5875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.725	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.75	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.775	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.8	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.9375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.9625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.0625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.0875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.225	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.25	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.275	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.3	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.4375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.5875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.725	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.75	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.775	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.8	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15

*In addition to the Incumbent Frequencies listed on Schedule A the Incumbent operates multiple interoperability channels that are licensed to the State of California, which will be retuned along with the Schedule A Incumbent Frequencies. However, the interoperability channels licensed to the State of California will be in the Schedule A of the forthcoming State of California Frequency Reconfiguration Agreement.

** Additional call signs shall be added by amendment as necessary.

SCHEDULE B

Replacement Frequencies

Incumbent Name: Los Angeles, County of

The related mobile frequencies and/or station classes for the Replacement Frequencies listed in this Schedule B, will be assigned from Nextel to Incumbent based on the Incumbent Licenses listed in Schedule A.

Nextel Assigns to Incumbent:

Reserved

SCHEDULE C

800 MHZ RECONFIGURATION

COST ESTIMATE – CERTIFIED REQUEST

Incumbent's Name: **Los Angeles, County of**

Request for Reconfiguration Funding

Pursuant to the Order, Incumbent is required to reconfigure its existing facilities and requests Nextel to fund the estimated reconfiguration costs included below:

Incumbent Payment Terms: Nextel will pay Incumbent an amount not to exceed the Estimated Cost(s) for Incumbent with respect to each category of work, as set forth below. Nextel will pay Incumbent **One Million, Two Hundred Fifty Thousand Dollars (\$1,250,000.00)** within 30 days after receipt by Nextel of the fully executed Agreement and fully completed Incumbent Information Form (as set forth on Exhibit A). Nextel will make an interim payment to Incumbent in the amount of **One Million, Two Hundred Fifty Thousand Dollars (\$1,250,000.00)** within thirty (30) calendar days after written notification of the clearing of the Incumbent Frequencies. and the return of the Schedule D equipment per Section 20 of the Agreement. Nextel will pay any outstanding balance of the Actual Costs due to Incumbent within 30 days after the Reconciliation Date (as "Actual Costs" and "Reconciliation Date" are defined in Section 3(b)(i)).

Vendor Payment Terms: Nextel will pay Vendor an amount not to exceed the Estimated Cost(s) for that Vendor with respect to each category of work, as set forth below. Nextel will pay each Vendor within 30 days after receipt by Nextel of (A) an invoice from the Vendor and (B) Incumbent's approval of receipt of goods and services and approval of associated costs included on the Vendor invoice.

1. System Description:

Existing EDACS System Description:

For its Countywide Integrated Radio System (CWIRS), the County of Los Angeles currently uses Harris' EDACS system to provide seamless radio coverage to more than 7,700 users. CWIRS' Trunked Simulcast communication is provided by two independent but interconnected Harris 800 MHz EDACS systems, comprising:

- The 20-channel Countywide System, deployed at seven hilltop sites and one downtown LA building (receive only)\
- The 20-channel Basin System, deployed at five (5) hilltop sites and one downtown LA building (receive only),

- 7 multisite zones/systems to provide fill-in coverage

The Basin and Countywide Simulcast systems use Harris Master II Base Station Repeaters and RS-232 simulcast controllers. Harris MASTR III Base Station repeaters and receivers are used for the multisite systems. The Harris Integrated Multisite Controller (IMC) is located at Eastern Ave.

The major system elements to be reconfigured are summarized in the table below:

	Total In System	Total Included in FRA
Base station frequencies	58	57
- Voice channels	49	48
- Home/Control channels	9	9
Repeater sites	15	15
Other sites (remote recv, BDA)	18	18
Subscriber units retuned	0	0
Subscriber units reprogrammed	1494	1494
Subscriber units replaced	6247	6247
Subscriber units rebanded total	7741	7741
Entities operating on the system	33	33

2. Reconfiguration Milestones: Identify the anticipated start date of the overall reconfiguration of your system (Project Start). Then, for each major reconfiguration milestone listed in the table below, provide (1) the anticipated number of days after project start date required to begin execution of the task identified, and (2) the estimated duration in number of days required to complete the task identified. As an FRA is negotiated, it is not always possible to know an actual start date for specific reconfiguration tasks. In such a case, it is acceptable to forecast an estimated start date from execution of the FRA (i.e., "contract execution + xx days") and estimate the duration of each task.

Reconfiguration Task	Start Date	# of Days After Project Start Date for Start of Task	Estimated Duration in # of Days
Project Start	6/3/13		
Reconfiguration Planning		30	48
Reconfigure Subscriber Equipment		456	224
Reconfigure Infrastructure Equipment		350	428
System Acceptance		428	640

3. Implementation Plan: Upgrade - Reconfiguration of the County's EDACS system will be accomplished through the installation of a P25 system utilizing rebanded frequency assignments. Included with the P25 replacement system are:

- Four (4) simulcast zones with MASTR V Base Stations
- Five (5) multisite zones with MASTR V Base Stations
- Maestro^{IP} Consoles

4. Cost Estimate:

Description of Work To Be Performed	Payee (separately identify Incumbent and each Vendor being paid for work performed)	Estimated Cost(s) for Incumbent and Each Vendor (Not to Exceed listed amount)
System Upgrade	(Vendor) Harris	\$17,300,000.00
System Upgrade	(Incumbent) Los Angeles, County of	\$2,500,000.00
Legal Services	(Vendor) Shulman Rogers Gandal Pordy & Ecker, P.A. 12505 Park Potomac Avenue, 6 th Floor Potomac, Maryland 20854 301-231-0930	\$200,000.00
Totals		
Harris	Vendor	\$17,300,000.00
Los Angeles, County of	Incumbent	\$2,500,000.00
Shulman Rogers Gandal Pordy & Ecker, P.A	Vendor	\$200,000.00
Total Estimated Costs		\$20,000,000.00

Certification

Pursuant to the Order, Incumbent hereby certifies to the Transition Administrator appointed pursuant to the Order that the funds requested above are the minimum necessary to provide Incumbent reconfigured facilities comparable to those presently in use in a manner that is reasonable, prudent and timely. Incumbent further certifies, to the best of Incumbent's knowledge, that any vendor costs identified on the Schedule C are comparable to costs previously charged by each such vendor to Incumbent.

Signature:_____

Print Name:_____

Title:_____

Phone Number:_____

E-mail:_____

Date:_____

SCHEDULE D

LOS ANGELES, COUNTY OF, CA PH II

1) Loaned Reconfiguration Equipment (provided by Nextel)

Quantity	Manufacturer	Description	Model Number	New/Used
		Small Cell Swing Equipment		
2		Duplexer, 806-869 MHz	DB-4090	Used
		Mutual Aid Equipment - Oat Mountain		
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
1		Diplexer, Rebanding (dbSpectra) 851-854/866-869 MHz	SPD-581	Used
7		Telex Vega Rebanding Panel	SYS000010000	Used
7		40" CABLE, MASTR IIE-VEGA	NLT-40MASTR IIE	Used
7		Cable,Back to Back Repeater,300in	CA-014819-030	Used
7		AUXILIARY BACKPLANE BOARD	19D902978G1	Used
7		RELAY	T154-4C-12VDC	Used
7		MOLEX HOUSING	03-09-1119	Used
16		MOLEX FEMALE CRIMP TERMINAL	02-09-1119	Used
8		MOLEX MALE CRIMP TERMINAL	02-09-2118	Used
2		Type 66 Block, Rack Mounted	19D438890G3	Used
		Mutual Aid Equipment - San Dimas Microwave		
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
1		Diplexer, Rebanding (dbSpectra) 851-854/866-869 MHz	SPD-581	Used
7		Telex Vega Rebanding Panel	SYS000010000	Used
7		40" CABLE, MASTR IIE-VEGA	NLT-40MASTR IIE	Used
7		Cable,Back to Back Repeater,300in	CA-014819-030	Used
7		AUXILIARY BACKPLANE BOARD	19D902978G1	Used
7		RELAY	T154-4C-12VDC	Used
7		MOLEX HOUSING	03-09-1119	Used
16		MOLEX FEMALE CRIMP TERMINAL	02-09-1119	Used
8		MOLEX MALE CRIMP TERMINAL	02-09-2118	Used
2		Type 66 Block, Rack Mounted	19D438890G3	Used
		Mutual Aid Reconfiguration - Verdugo Peak		
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
1		COMBINER,6CH,800MHZ (dbSpectra) - (866.5125 MHz, 867.0125 MHz, 867.5125 MHz, 868.0125 MHz, 868.5125 MHz, 868.9875 MHz)	DSCC85-06N	Used
1		Diplexer, Rebanding (dbSpectra) - (851-854/866-869 MHz)	SPD-581	Used
7		Telex Vega Rebanding Panel	SYS000010000	Used
7		Cable,Back to Back Repeater,40in	CA-014819-004	Used

7		Cable,Back to Back Repeater,300in	CA-014819-030	Used
2		Rack,Open,96 in	SCMR1E	Used
2		Type 66 Block, Rack Mounted	19D438890G3	Used
7		STATION,CONV MASTR III,806-870MHZ,100W - (866.0125, 866.5125 MHz, 867.0125 MHz, 867.5125 MHz, 868.0125 MHz, 868.5125 MHz, 868.9875 MHz)	SX8MCX	Used
7		PROGRAMMING,NPSPAC	SXNP1A	Used
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	Used
7		COVER,SCREEN,T/R SHELF	SXMN9C	Used
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	Used
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	Used
7		Kit, SOR Relay	SXSU3D	Used
7		Feature, 4 wire audio	SXSF3J	Used
		Mutual Aid Equipment - Rolling Hills Transmit		
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
1		COMBINER,6CH,800MHZ (dbSpectra) - (866.5125 MHz, 867.0125 MHz, 867.5125 MHz, 868.0125 MHz, 868.5125 MHz, 868.9875 MHz)	DSCC85-06N	Used
1		Diplexer, Rebanding (dbSpectra) - (851-854/866-869 MHz)	SPD-581	Used
7		Telex Vega Rebanding Panel	SYS000010000	Used
7		Cable,Back to Back Repeater,40in	CA-014819-004	Used
7		Cable,Back to Back Repeater,300in	CA-014819-030	Used
2		Rack,Open,96 in	SCMR1E	Used
2		Type 66 Block, Rack Mounted	19D438890G3	Used
7		STATION,CONV MASTR III,806-870MHZ,100W - (866.0125, 866.5125 MHz, 867.0125 MHz, 867.5125 MHz, 868.0125 MHz, 868.5125 MHz, 868.9875 MHz)	SX8MCX	Used
7		PROGRAMMING,NPSPAC	SXNP1A	Used
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	Used
7		COVER,SCREEN,T/R SHELF	SXMN9C	Used
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	Used
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	Used
7		Kit, SOR Relay	SXSU3D	Used
7		Feature, 4 wire audio	SXSF3J	Used

2) Replacement Equipment (provided by Nextel)

Quantity	Manufacturer	Description	Model Number	New/Used
		Small Cell Reconfiguration		
		OPS, H.Claude Hudson Med. Center		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		OPS, High Desert Hospital		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		OPS, LAC-USC Med Center		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
1		MANUAL,INSTL,MASTR III AUX RECEIVER	MM001SR	New
1		MANUAL,MAINT,MASTR III AUX RECEIVER,800M	MM004SR	New
2		PANEL, SYSTEM, CONVENTIONAL	SRCN3W	New
2		RECEIVER,MASTR III AUX RX,806-825MHZ	SR8N01	New
2		FEATURE,VOTING TONE,1950HZ	SRSF1W	New
2		SHELF,AUX RX	SRRB1N	New
2		PANEL, BLANK	SRMN5Z	New
2		KIT, CABLE, 83/86 IN.CABINET/RACK, SHELF #1	SRCF3Z	New

2		POWER SUPPLY, 120 VAC, 47-63 HZ, 12 VDC	SRPS9V	New
2		OPTION, NO CABINET	SRMN2B	New
		OPS, Long Beach Health Center		
1		STATION, CONV MASTR III, 806-870MHZ, 100W	SX8MCX	New
1		PROGRAMMING, NPSPAC	SXNP1A	New
1		Instruction, Rack-up, Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER, SCREEN, T/R SHELF	SXMN9C	New
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO RELAY, NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		OPS, Rancho Los Amigos		
1		STATION, CONV MASTR III, 806-870MHZ, 100W	SX8MCX	New
1		PROGRAMMING, NPSPAC	SXNP1A	New
1		Instruction, Rack-up, Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER, SCREEN, T/R SHELF	SXMN9C	New
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO RELAY, NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		Museum of Art		
1		STATION, CONV MASTR III, 806-870MHZ, 100W	SX8MCX	New
1		PROGRAMMING, NPSPAC	SXNP1A	New
1		Instruction, Rack-up, Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER, SCREEN, T/R SHELF	SXMN9C	New
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO RELAY, NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		Parks & Recreation		
1		STATION, CONV MASTR III, 806-870MHZ, 100W	SX8MCX	New
1		PROGRAMMING, NPSPAC	SXNP1A	New
1		Instruction, Rack-up, Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER, SCREEN, T/R SHELF	SXMN9C	New
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO	SXCJ5E	New

		RELAY,NO DUPLEXER		
1		Feature, 4 wire audio	SXSF3J	New
		ISD, Portable Repeater		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		ISD, Mobile Repeater/Tower		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		Mutual Aid Reconfiguration		
		Mutual Aid Reconfiguration - Oat Mountain		
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		COMBINER,8CH,800MHZ (dbSpectra) - (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz, 855.0000 MHz (Spare Port))	DSCC85-08N	New
2		Rack,Open,96 in	SCMR1E	New
2		Type 66 Block, Rack Mounted	TBD	New
7		STATION,CONV MASTR III,806-870MHZ,100W (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	SX8MCX	New
7		PROGRAMMING,NPSPAC	SXNP1A	New
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
7		COVER,SCREEN,T/R SHELF	SXMN9C	New
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
7		CABLE,RX ANTENNA,NO	SXCJ5E	New

		RELAY,NO DUPLEXER		
7		Kit, SOR Relay	SXSU3D	New
7		Feature, 4 wire audio	SXSF3J	New
		Mutual Aid Reconfiguration - San Dimas Microwave		
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		COMBINER,8CH,800MHZ (dbSpectra) - (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz, 855.0000 MHz (Spare Port))	DSCC85-08N	New
7		STATION,CONV MASTR III,806-870MHZ,100W (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	SX8MCX	New
7		PROGRAMMING,NPSPAC	SXNP1A	New
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
7		COVER,SCREEN,T/R SHELF	SXMN9C	New
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
7		Kit, SOR Relay	SXSU3D	New
7		Feature, 4 wire audio	SXSF3J	New
		Mutual Aid Reconfiguration - Verdugo Peak		
2		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		COMBINER,6CH,800MHZ (dbSpectra) - (851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	DSCC85-06N	New
2		Rack,Open,96 in	SCMR1E	New
2		Type 66 Block, Rack Mounted	TBD	New
7		STATION,CONV MASTR III,806-870MHZ,100W (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	SX8MCX	New
7		PROGRAMMING,NPSPAC	SXNP1A	New
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
7		COVER,SCREEN,T/R SHELF	SXMN9C	New
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
7		Kit, SOR Relay	SXSU3D	New

7		Feature, 4 wire audio	SXSF3J	New
		Mutual Aid Equipment - Rolling Hills Transmit		
2		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		COMBINER,6CH,800MHZ (dbSpectra) - (851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	DSCC85-06N	New
2		Rack,Open,96 in	SCMR1E	New
2		Type 66 Block, Rack Mounted	TBD	New
7		STATION,CONV MASTR III,806-870MHZ,100W (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	SX8MCX	New
7		PROGRAMMING,NPSPAC	SXNP1A	New
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
7		COVER,SCREEN,T/R SHELF	SXMN9C	New
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
7		Kit, SOR Relay	SXSU3D	New
7		Feature, 4 wire audio	SXSF3J	New
		Expendables		
1100		CABLE,COAX,1/2 IN,50 OHM,SUPERFLEX	FSJ4-50B	New
46		CONNECTOR,N MALE,RIGHT ANGLE,FOR FSJ4-50B	F4PNR-HC	New
78		CONNECTOR,N MALE,FOR FSJ4-50B	F4PNMV2-HC	New
200		CABLE,COAX,7/8 IN,50 OHM,PE FOAM	LDF5-50A	New
4		CONNECTOR,N FEMALE,FOR LDF5-50A	L5TNF-PS	New
4		GROUND KIT,FOR LDF5-50A	GK-S78	New
2200		CABLE,COAX,1/4 IN,50 OHM,PE FOAM	FSJ1-50A	New
46		CONNECTOR,BNC MALE,FOR FSJ1-50A	F1TBM-C	New
46		CONNECTOR,N MALE,WITH HEX NUT,FOR FSJ1-50A	F1PNM-HC	New
1700	RF Ind	TNC MALE CRIMP CONNECTOR	RFT-1202-7T	New
		Mutual Aid Equipment - Blackjack Mountain		
1		STATION,CONV MASTR III,806-870MHZ,100W 853.0125T/808.0125R	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in	SXMN2D	New

		Cab/Rack		
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO RELAY, NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
101		P7170IP Radio Type, System, 806-870 MHz	HT7170T81X	New
1069		P7150IP Radio Type, Scan, 806-870 MHz	HT7150S81X	New
1170		FEATURE PACKAGE, EDACS TRUNKING OPERATION (includes Conventional operation)	HTED	New
10		ANTENNA, 806-870 MHZ, FLEXIBLE END FED GAIN	HTNC5K	New
1160		ANTENNA, 806-870 MHZ, WHIP	HTNC1K	New
1170		BATTERY, NIMH, EXTRA HIGH CAPACITY	HTPA7W	New
1170		FEATURE, 800 SYSTEMS/GROUPS	HTPL3R	New
101		MICROPHONE, LAPEL, VEHICULAR CHARGER COMPATIBLE Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	HTAE7F	New
292		MICROPHONE, LAPEL Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	HTAE7A	New
292		BELT LOOP, LEATHER, WITH SWIVEL	HTHC7T	New
878		BELT CLIP, METAL	HTHC7P	New
40		MANUAL MAINTENANCE, P7100IP SERIES, 800 MHZ	MM800HT	New
101		CHARGER, VEHICULAR, ENHANCED, DUAL POSITION Includes Vehicular Charger, Mounting Bracket and Cables, Mic with Hookswitch, Mic Hanger Kit, Speaker, and Installation and Operator's Manuals. For NiCd or NiMH batteries. For this feature, use the speaker mic	H2VPDE	New
2282		P5150 Radio Type (Scan), 806-870 MHz	MAHM-S8DXX	New
460		PORTABLE, P5450, 800MHz, Unencrypted	MAEX-C81XX	New
2272		ANTENNA, 806-870 MHZ, WHIP	MAHM-NC1K	New
10		ANTENNA, 806-870 MHZ, FLEXIBLE END FED GAIN	MAEX-NNC5K	New
450		ANTENNA, 806-870 MHZ, WHIP	MAEX-NNC1K	New
10		ANTENNA, 764-870 MHZ, FLEXIBLE END FED GAIN	MAHM-NC5K	New
460		FEATURE PACKAGE, EDACS TRUNKING OPERATION (includes Conventional operation)	MAEX-PKGED	New
460		FEATURE, 512 SYSTEMS/GROUPS	MAEX-NPL7Z	New
2282		BATTERY, NIMH, EXTRA HIGH	MAHM-PA9P	New

		CAPACITY		
460		BATTERY, NIMH, 2400 MAH	MAEX-NPA9X	New
60		MICROPHONE, LAPEL, VEHICULAR CHARGER COMPATIBLE Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	MAHM-AE7F	New
650		MICROPHONE, LAPEL Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	MAHM-AE7A	New
67		MICROPHONE, LAPEL Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	MAEX-NAE9D	New
649		BELT LOOP, LEATHER, WITH SWIVEL	MAHM-HC7T	New
37		BELT LOOP, LEATHER, WITH SWIVEL	MAEX-NHC7T	New
1633		BELT CLIP, METAL	MAHM-HC7P	New
423		BELT CLIP, METAL	MAEX-NHC7P	New
40		MANUAL, MAINTENANCE, P5100 SERIES, 800 MHZ	MAMM-800HM	New
20		MANUAL, MAINTENANCE, P5400 SERIES, UHF	MAMM-400EX	New
487		CHARGER, SINGLE, TRI-CHEMISTRY For use with all P5100 batteries except MAHM-NPA2J	MAHM-CH9E	New
383		CHARGER, SINGLE, TRI-CHEMISTRY	MAEX-NCH9T	New
60		CHARGER, MULTI, TRI-CHEMISTRY For use with all P5100 batteries except MAHM-NPA2J	MAHM-CH9A	New
15		CHARGER, MULTI, TRI-CHEMISTRY	MAEX-NCH9U	New
30		CHARGER, VC4000, TRI-CHEMISTRY	MAH2-VC4PB	New
30		POWER ADAPTER KIT, VC4000, CHARGER	MAH2-NPS9X	New
60		CHARGER, VEHICULAR, ENHANCED, DUAL POSITION Includes Vehicular Charger, Mounting Bracket and Cables, Mic with Hookswitch, Mic Hanger Kit, Speaker, and Installation and Operator's Manuals. For NiCd or NiMH batteries. For this feature, use the speaker mic designated as Vehicular Charger Compatible.	H2VPDE	New
3		BATTERY CONDITIONER/ANALYZER, 4 BAYS, Requires sleeves below	CADEX-7400	New
12		ADAPTER, SLEEVE FOR CADEX-7400 SYSTEM FOR NICD/NIMH BATTERIES	CADEX-C7 Adapter	New

1		BATTERY CONDITIONER/ANALYZER, IQ5 SYSTEM, 6 BAYS, Requires NiCd/NiMH sleeves below	BC3506QP-5	New
12		ADAPTER, SLEEVE FOR IQ5 SYSTEM, NIMH BATTERIES	BA4547	New
2335		M7100IP Radio Type, 806-870 MHz, 35W	MAHG-S8MXX	New
2335		FEATURE PACKAGE, EDACS TRUNKING OPERATION (includes Conventional operation)	MAHG-ED	New
194		CONTROL UNIT, SYSTEM, FRONT MOUNT	MAHG-CP7V	New
2032		CONTROL UNIT, SCAN, REMOTE MOUNT	MAHG-CP7W	New
109		CONTROL UNIT, SCAN, FRONT MOUNT	MAHG-CP7U	New
194		MICROPHONE, DESK	MAHG-MC5A	New
2141		MICROPHONE, MOBILE	MAHG-MC7T	New
2032		KIT, ACCESSORY, REMOTE MOUNT, 50W TX AND BELOW	MAHG-ZN5X	New
126		KIT, ACCESSORY, FRONT MOUNT, 50W TX AND BELOW	MAHG-ZN5W	New
2287		FEATURE, 800 EDACS SYSTEMS/GROUPS	MAHG-PL3R	New
50		MANUAL, MAINTENANCE, M7100 SERIES, 800 MHZ	MAMM-800HG	New
27		DESKTOP BASE, TONE REMOTE, LOCAL CONTROL, CLOCK/VU METER	DSDX07	New
150		DESKTOP BASE, WITH CLOCK/VU METER, LOCAL CONTROL	DSDX08	New

3) Replaced Equipment (to be delivered to Nextel prior to Closing)

Quantity	Manufacturer	Description	Model Number
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
2		Mastr II Receiver	Mastr II Receiver
2		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II

1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		800 MHz Combiner - 8 Port	DB8062F8-B
7		Mastr II Conventional Repeater	Mastr II
7		Power Supply	Power Supply
1		800 MHz Combiner - 8 Port	DB8062F8-B
7		Mastr II Conventional Repeater	Mastr II
7		Power Supply	Power Supply
1		Mastr II Conventional Repeater (Tone control 6 chan TX with 5 AUX Mastr II Receivers)	Mastr II
7		Power Supply	Power Supply
1		Mastr II Conventional Repeater (Tone control 6 chan TX with 5 AUX Mastr II Receivers)	Mastr II
7		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
100		MPA EDACS System Portable Radio (each with EDACS operation and system keypad)	MPA (System)
1		700P System Portable Radio (each with EDACS operation and system keypad)	700P (System)
1069		MPA EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	MPA (Scan)
10		Flexible End Fed Antenna	Flex Antenna
1160		Portable Antenna	Antenna
1170		Extra Hi Cap Battery	Extra Hi Cap Battery
101		Vehicular Lapel Microphone	Lapel Microphone
292		Lapel Microphone	Lapel Microphone
292		Belt Loop	Belt Loop
878		Belt Clip	Belt Clip
101		Dual Position Vehicular Charger	Vehicular Charger
579		MTL EDACS Portable Radio (each with EDACS operation)	MTL
131		LPE-200 LBS Model EDACS Scan Portable Radio (each with EDACS operation, scan keypad and must be one of the following LBS models: KRD 103 103/A31, A32, A41, A42)	LPE-200 (KRD 103 103/A31, A32, A41, A42)
386		300P EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	300P (Scan)
48		PCS EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	PCS (Scan)
461		MRK EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	MRK (Scan)
636		700P EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	700P (Scan)
41		LPE-50 EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	LPE-50 (Scan)
96		MPA EDACS Select Portable Radio	MPA (Select)

		(each with EDACS operation and select keypad)	
51		MRK Select Portable Radio (each with EDACS operation and select keypad)	MRK (Select)
313		MRK EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	MRK (Scan)
2742		Portable Antenna	Antenna
2742		Extra Hi Cap Battery	Extra Hi Cap Battery
777		Vehicular Lapel Microphone	Lapel Microphone
686		Belt Loop	Belt Loop
2056		Belt Clip	Belt Clip
870		Single Unit Charger	Single Unit Charger
75		Mult Unit Charger	Mult Unit Charger
60		Vehicular Charger Component	Vehicular Charger
60		Dual Position Vehicular Charger	Vehicular Charger
3		Battery Conditioner	Battery Conditioner
1		Battery Conditioner/Analyzer	Battery Conditioner / Analyzer
1662		Rangr EDACS System Mobile Radio (each with EDACS operation, system remote mount control unit and must be one of the following NPSPAC models: 19C852802P1 or P2)	Rangr (System) (19C852802P1 or P2)
31		MDX EDACS Scan Mobile Radio (each with EDACS operation and scan front mount control unit)	MDX (Scan)
11		FMD EDACS System Mobile Radio (each with EDACS operation, system front mount control unit and must be one of the following NPSPAC models: 19C336860P7, P8, P10, P11, or P13 through P18)	FMD (System) (19C336860P7, P8, P10, P11, or P13 through P18)
153		Rangr EDACS System Mobile Radio (each with EDACS operation, system front mount control unit and must be one of the following NPSPAC models: 19C852802P1 or P2))	Rangr (System) (19C852802P1 or P2)
6		MDX EDACS System Mobile Radio (each with EDACS operation and system front mount control unit)	MDX (System)
370		Orion EDACS Scan Mobile Radio (each with EDACS operation and scan remote mount control unit)	Orion (Scan)
78		500M EDACS System Mobile Radio (each with EDACS operation and System remote mount control unit)	500M (Scan)
7		Orion EDACS System Mobile Radio (each with EDACS operation and System remote mount control unit)	Orion (System)
17		500M EDACS System Mobile Radio (each with EDACS operation and System remote mount control unit)	500M (System)
194		Desk Microphone	Desk Microphone

2141		Mobile Microphone	Mobile Microphone
27		DESKTOP BASE, TONE REMOTE, LOCAL CONTROL, CLOCK/VU METER	Desktop Base
150		DESKTOP BASE, WITH CLOCK/VU METER, LOCAL CONTROL	Desktop Base

4) Reserved

5) Reserved

SCHEDULE E

Product Typical Values

The Product Typical Values for Replacement Equipment shall be:

- a. for Replacement Equipment set forth on Schedule C, the cost shown on Schedule C for the item of Replacement Equipment; or
- b. for Replacement Equipment comprising Harris subscriber radios, options and accessories, the most recent price list as of the date a reconciliation statement is sent to Incumbent by Nextel less 15%.

In lieu of paying the Product Typical Value as stated above, Incumbent may choose to purchase Comparable Equipment, defined below, from any source and send the equipment, along with adequate documentation, to Nextel prior to the Reconciliation Date. Comparable Equipment, shall mean equipment of the same condition (e.g. new for new or used for used) and from the same manufacturer, that is the identical model and includes the same options and accessories as the Replacement Equipment provided by Nextel.

|

Exhibit A

Incumbent Information

The following questions are required for processing Electronic Funds Transfers and if Incumbent wants Nextel to complete the FCC filings on its behalf. All information contained herein shall be kept strictly confidential and will be used only in completion of the Frequency Reconfiguration transaction.

I. INCUMBENT INFORMATION

Please provide the following information:

Company/Name: _____

Contact: _____ Title: _____

Address: _____

City/State/Zip: _____

Phone: _____ Fax: _____

Email: _____

Check Appropriate Box: ☐ Individual/Sole Proprietor ☐ Corporation ☐ Partnership
☐ Other _____

II. BANK ACCOUNT INFORMATION (Required for payment processing.) – N/A

Please select preferred payment method: ☐ Wire Transfer ☐ ACH ☐ Check

Name of Bank: _____

Address of Bank: _____

City/State/Zip: _____

Bank Phone #: _____

ABA (Routing #): _____

Account #: _____

Name on Account: _____

Federal, State or Individual SS #: _____

Name of Brokerage Firm (if applicable): _____

Brokerage Account # (if applicable): _____

In the event Incumbent will not provide information for Wire Transfer or ACH, Incumbent acknowledges that all payments will be made by check.

Acknowledged by Incumbent: _____
(signature required only if Incumbent does not want an electronic funds transfer)

III. TAX INFORMATION

The Internal Revenue Service and state tax authorities require Nextel to report all transactions, even if the transaction is exempt from taxation (if so, it will be reported to the IRS as a like-kind exchange). Therefore, it is necessary for Nextel to collect the information below. If you have specific questions about your tax implications in this transaction, you should consult your own accountant or financial advisor.

Incumbent's Federal or Individual Tax ID #,
FEIN (Federal) or SSN (individuals):

State(s) – sales tax license, resale permit,
employment, etc.):

Local (if applicable):

Current State and County location for your
principal executive office:

If there has been more than one location for
the principal executive office within the past
five (5) years, list each such
City/County/State location:

IV. FINANCIAL RECONCILIATION CONTACT INFORMATION (indicate one)

A. Check here if *same* as indicated in Item I above _____

B. Fill in below if *different* from Item I above as follows:

Financial Contact Name: _____

Title: _____

Address: _____

City/State/Zip: _____

Phone: _____ **Fax:** _____

Email: _____

V. REGULATORY INFORMATION

Would you like Nextel's Regulatory department to prepare and file all necessary FCC
paperwork on your behalf? Yes / No

If yes, please provide the following **Universal Licensing System (“ULS”)** information for your licenses:

FRN (FCC Registration Number): _____

ULS PASSWORD: _____

Contact Representative for any FCC related issues:

Name: _____

Phone Number: _____

If no, please provide the following information regarding who will take care of the preparation and filing of all necessary FCC paperwork on your behalf:

Contact Name: _____

Organization: _____

Address: _____

City: _____

State/Zip: _____

Phone Number: _____

Email Address: _____

I hereby acknowledge that all of the information provided herein is true and correct as of the date signed below.

Incumbent Signature: _____

Print Name: _____

Title: _____

Date: _____

Exhibit B(1)
Reconciliation Documentation
Certification of Labor

Incumbent hereby certifies that the internal labor information provided for the Frequency Reconfiguration Agreement, dated _____, with Nextel (the "FRA") is true and complete to the best of Incumbent's knowledge. Incumbent further certifies that the number of planning or reconfiguration tasks that the Incumbent performed using internal labor for each labor category on the TA-approved Cost Estimate and/or the number of internal labor hours incurred in performing planning or reconfiguration tasks for each labor category on the TA-approved Cost Estimate (included in the FRA) were for 800MHz Planning or Reconfiguration and have been documented in accordance with the TA's policy on Incumbent Labor at <http://www.800ta.org/content/PDF/policy/IncumbentLaborPolicy.pdf> as of the Effective Date of the FRA. Incumbent acknowledges that the reconciliation documentation and related supporting records for the FRA are subject to the Review Rights (as that term is defined in the FRA with Nextel) of the TA.

Incumbent Name: _____

Signature: _____

Name: _____

Title: _____

Date: _____

Exhibit B(2)
Reconciliation Documentation
Time Sheet Documentation

THIS IS AN EXAMPLE DOCUMENT
THE ACTUAL DOCUMENT IS AVAILABLE FROM THE NEXTEL FINANCE
DEPARTMENT

Deal ID:

Deal Name:

Name	* Date	** <u>Schedule C</u> Category of Work	Description of Work Performed (ties back to <u>Schedule C</u>)	Actual Hours Worked	*** Rate (hourly)	Total Cost
					TOTAL COST	\$

CERTIFICATION:

Incumbent hereby certifies that the internal labor information provided for the Frequency Reconfiguration Agreement, dated _____, with Nextel (the "FRA") is true and complete to the best of Incumbent's knowledge. Incumbent further certifies that the number of internal labor hours incurred in performing planning or reconfiguration tasks for each labor category on the TA-approved Cost Estimate (included in the FRA) were for 800MHz Planning or Reconfiguration and have been documented in accordance with the TA's policy on Incumbent Labor at <http://www.800ta.org/content/PDF/policy/IncumbentLaborPolicy.pdf> as of the Effective Date of the FRA. Incumbent acknowledges that the reconciliation documentation and related supporting records for the FRA are subject to the Review Rights (as that term is defined in the FRA with Nextel) of the TA.

Incumbent Name: _____

Signature: _____

Title: _____

Date: _____

*Separate entries for each date when labor expense was incurred must be provided on a per employee basis. Date ranges will not be accepted.

**A total should be provided for each Schedule C category. Subtotals can be provided within the page or a separate page can be used for each category/grouping.

***Hourly rates may not exceed the Schedule C negotiated rate for similar reconfiguration/planning activities unless accompanied by an approved change notice that explains why a higher rate was necessary to complete reconfiguration/planning.

Exhibit B(3)
Reconciliation Documentation
Per Unit Summary Documentation

THIS IS AN EXAMPLE DOCUMENT
THE ACTUAL DOCUMENT IS AVAILABLE FROM THE NEXTEL FINANCE
DEPARTMENT

Deal ID:

Deal Name:

* <u>Schedule C</u> Category of Work	Description of Work Performed (ties back to <u>Schedule C</u>)	** Quantified Units	*** Rate (Per Unit)	Total Cost
				\$

CERTIFICATION:

Incumbent hereby certifies that the internal labor information provided for the Frequency Reconfiguration Agreement, dated _____, with Nextel (the "FRA") is true and complete to the best of Incumbent's knowledge. Incumbent further certifies that the number of planning or reconfiguration tasks that the Incumbent performed using internal labor for each labor category on the TA-approved Cost Estimate (included in the FRA) were for 800MHz Planning or Reconfiguration and have been documented in accordance with the TA's policy on Incumbent Labor at <http://www.800ta.org/content/PDF/policy/IncumbentLaborPolicy.pdf> as of the Effective Date of the FRA. Incumbent acknowledges that the reconciliation documentation and related supporting records for the FRA are subject to the Review Rights (as that term is defined in the FRA with Nextel) of the TA.

Incumbent Name: _____

Signature: _____

Title: _____

Date: _____

*A total should be provided for each Schedule C category. Subtotals can be provided within the page or a separate page can be used for each category/grouping.

**A detailed list identifying the individual units (by serial number or other unique identifying factor) must be provided in addition to this summary document.

***Per unit rates may not exceed the Schedule C negotiated rate for similar reconfiguration/planning activities unless accompanied by an approved change notice that explains why a higher rate was necessary to complete reconfiguration/planning.

Exhibit C

Exhibit to Illustrate Compliance with Transition Administrator New System Policy

1. Licensees must submit an implementation schedule for reconfiguration that is absent of any new system or replacements not required for reconfiguration, and demonstrate to the TA's satisfaction that the proposed new system reconfiguration will not lengthen this schedule.

See attached proposed implementation schedule.

2. Submit a Cost Estimate for the full reconfiguration of the existing system absent of any new system or replacements not required for reconfiguration, and certify that the costs in this Cost Estimate are the "minimum necessary" to provide facilities comparable to those presently in use.

See attached PRW from Nextel.

3. Disclose to the TA a description of the planned new system along with an estimate of the work and costs for the new system.

Incumbent will migrate from the Los Angeles County's EDACS system to a proposed P25 system. See attached Harris Corporation P25 Statement of Work.

800 MHz SYSTEM REBANDING AGREEMENT

This 800 MHz System Rebanding Agreement (“Agreement”) is made and entered into as of May 14, 2013 by and between the **COUNTY OF LOS ANGELES, CALIFORNIA**, a political subdivision of the State of California with a business address of 500 W. Temple St., Los Angeles, CA 90012 (“County”) and **HARRIS CORPORATION, RF COMMUNICATIONS DIVISION**, a Delaware corporation with a business address of 221 Jefferson Ridge Parkway Lynchburg, VA 24501 (“Harris”), based upon the following recitals:

R1. The Orders. Pursuant to certain orders, as amended (“Orders”) issued by the Federal Communications Commission (“FCC”), certain licensees of 800 MHz frequencies used in public safety or other systems must reconfigure their systems to operate on other licensed public safety frequencies, and Sprint/Nextel must provide all funds necessary to provide each such licensee reconfigured facilities that are comparable to those presently in use.

R2. Sprint FRA. Pursuant to the Orders, County and SprintNextel have entered into a Frequency Reconfiguration Agreement as of May 14, 2013, pending and subject to TA approval (the “FRA”), a copy of which is attached hereto as **Attachment A**, pursuant to which County has agreed to relinquish certain 800 MHz frequencies and move to certain replacement frequencies.

R3. Reconfiguration Proceeds. The FRA provides that Sprint Nextel will pay a fixed amount of the costs to reconfigure County’s system (the “Reconfiguration Proceeds”) and that a portion of such Reconfiguration Proceeds will be paid directly to Harris to pay for the services contemplated under this Agreement and more particularly described in the Statement of Work (SOW) attached hereto as Attachment B;

R4. FCC & TA Authority. The FCC has appointed a Transition Administrator (the “TA”) to ensure that the rebanding initiative proceeds on schedule and in a planned and coordinated manner so that disruption is minimized. This Agreement is made pursuant to certain policies and procedures required by the TA and pursuant to its authority under the Orders;

R5. County desires to engage the services of Harris as an independent contractor to perform the Work (as defined below).

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are acknowledged by the Parties hereto, and the mutual promises and agreements contained herein, the Parties mutually agree as follows:

1. DEFINITIONS

The terms and phrases in this Section 1, in quotes and with initial letter(s) capitalized, shall have the meanings set forth below whenever used in this Agreement. When terms or phrases are defined within other Sections of this Base Document, this Section 1 provides a cross-reference to such Sections. Singular nouns and phrases are construed to include the plural, and vice versa.

1.1 “Agreement” has the meaning specified in *Section 2 – Incorporated Documents*, and in particular, at Section 2.2.

1.2 “Base Document” means this document entitled *800 MHz System Rebanding Agreement*, exclusive of the Attachments listed in *Section 2 – Incorporated Documents*.

1.3 “Business Day” means Monday through Friday, excluding the County-observed holidays, unless expressly stated otherwise.

1.4 “Change Order” refers to the mechanism referred to in *Section 9 – Change Orders and Required Changes*.

1.5 “DDD” or “Detailed Design Documents” means the Detailed Design Documents described in Sections 5.6.1 through 5.6.12.

1.6 “DDR” or “Detailed Design Review” means the Detailed Design Review described in Section 4.2 and 5.6 of this Base Document.

1.7 “Documentation” means any and all written or electronic materials provided or made available by Harris under this Agreement regarding the capabilities, operation, installation, and use of the New System.

1.8 “Effective Date” means the date upon each of the following has occurred: (1) the County and Harris have duly executed this Agreement, (2) Sprint has duly executed the FRA, and (3) the TA has approved the FRA.

1.9 “Excusable Delay” has the meaning specified in *Section 12 – Excusable Delays*.

1.10 “FRA” means the Frequency Reconfiguration Agreement between the County and SprintNextel referenced in recital R2 and Section 2.2.1, and incorporated into this Agreement as *Attachment A*.

1.11 “FCC” means the United States Federal Communications Commission.

1.12 “Hardware” means Infrastructure Hardware and Terminal Hardware.

1.13 “Infrastructure Hardware” means certain fixed equipment, goods and materials for the New System Infrastructure which is P25, compliant with Phase 1, and capable of upgrade to Phase 2, that will be provided under the FRA.

1.14 “Maximum Agreement Sum” has the meaning specified in Section 6.1 of *Section 6 – Maximum Agreement Sum*.

1.15 “New System” means the system, resulting from Harris’ successful and full performance under this Agreement, that is compliant with the Orders and P25.

1.16 “Orders” means the FCC rebanding orders referenced in recital R1.

1.17 “Party” refers to either Harris or the County, and “Parties” refers to them both.

1.18 “P25” means the standard developed in North America under federal, state, and local representative and Telecommunication Industry Association governance for the manufacturing of communication products. The P25 standards suite (TIA-102) is administered by the TIA Mobile and Personal Private Radio Standards Committee

1.19 “Project Schedule” refers to the document described in Section 5.2.

1.20 “Project Sites” means any location where Work is to be performed.

1.21 “Reconfiguration Proceeds” means the fixed amount of funds referenced in recital R3 that are to be paid by SprintNextel under the FRA for the New System.

1.22 “SOW” means *Attachment B – Statement of Work*, listed in Section 2.2.2.

1.23 “Terminal Hardware” means the mobile radio units and portable radio units which are P25 Phase 1 compliant.

1.24 “Work” means all tasks, subtasks, obligations, activities, or services to be performed by Harris under this Agreement, including but not limited to those listed, identified, or described in the SOW.

2. INCORPORATED DOCUMENTS

2.1 Harris and the County acknowledge and agree that this Agreement is subject to and contingent upon Sprint and the County entering into the *Attachment A - Frequency Reconfiguration Agreement*. If the FRA is not entered into, then this Agreement shall be of no force and effect. The County shall not amend the FRA after the Effective Date of this Agreement without Harris’ advance written approval, unless the amendment is cost-neutral or otherwise does not effect Harris.

2.2 This Base Document along with the Attachments listed below, and attached hereto, collectively form and are referred to herein as the “Agreement.” In the event of any conflict or inconsistency in the definition or interpretation of any word, responsibility, schedule, or the contents or description of any task, deliverable, goods, service, or other work, or otherwise between this Base Document and the Attachments, or between Attachments, such conflict or inconsistency shall be resolved by giving precedence first to this Base Document and then to the Attachments according to the following priority:

2.2.1 Attachment A FRA (with all schedules and exhibits)

2.2.2 Attachment B SOW (with the following sub-attachments)

A – Site Migration Drawings

B – Project Schedule

C - Functional Test Procedure

D – Coverage Characterizations Test Procedure

E - T1 Public Safety Leased T1 Specification

Appx. A – Existing CWIRS EDACS System

2.2.3 Attachment C [Intentionally Omitted]

2.2.4 Attachment D Software License Agreement (with the following sub-attachments)

1 – List of Licensed Programs

2 – Adaptive Server® Enterprise 12.5.2

2.2.5 Attachment E Incumbent Acknowledgement Form

3. [INTENTIONALLY OMITTED]

4. WORK TO BE PERFORMED

Harris will perform the Work set forth in the SOW.

5. PROJECT PLANNING

5.1 Project Managers. Harris hereby designates a Project Manager (“Harris Project Manager”) who will lead Harris’ team for all facets of the Project, including but not limited to the delivery, installation and testing of the System described in the SOW (the “Project”) and who will serve as the County’s primary point-of-contact for Harris’s project team and as the official liaison between Harris’s project team and County. County shall designate a Project Manager (“County Project Manager”) to function as the single point-of-contact and official liaison between Harris’s Project Manager and the County. Harris shall notify County Project Manager, in writing, when there is a new Harris Project Manager assigned to this Agreement. The County reserves the right to accept or reject the appointment, and such right will be exercised reasonably. The Harris Project Manager’s information is:

Harris Project Manager:	Phil Roland
Address:	200 Hawthorne Ave. SE
	Salem, OR 97301
Phone:	503.369.1388
Fax:	n/a
e-mail:	phillip.roland@harris.com

County shall notify Harris Project Manager, in writing, when there is a new County Project Manager assigned to this Agreement. The County Project Manager’s information is:

County Project Manager: Ian Telfer
Address: Los Angeles County - ISD
1110 North Eastern Avenue
Los Angeles, CA 90063
Phone: 323.267.3822
Fax: n/a
e-mail: ITelfer@isd.lacounty.gov

5.2 Project Completion Dates. The completion dates for different phases of this Agreement are described in the Project Schedule included in the SOW (the “Project Schedule”). The Project Schedule may be modified by mutual written agreement of the Parties or as otherwise provided in this Agreement. Time is of the essence for each Party’s performance.

5.3 Project Kick-off Meeting. Promptly after the Effective Date of the Agreement, the Harris Project Manager shall schedule a Project Kick-Off Meeting, the timing and location of which will be mutually agreed upon by Harris and County. The objectives of this meeting include introduction of all project participants, review of the roles of the project participants, review of the overall project scope and objectives as well as review of the resource and scheduling requirements and current Project Site status.

5.4 Project Site Visits. All existing towers, shelters and associated equipment provided by or mandated by County shall be satisfactory in all manners to accommodate the New System. Following the Effective Date of the Agreement, the County shall provide Harris with access to all Project Sites upon reasonable notice to allow the Parties to thoroughly examine each Project Site.

5.5 [Intentionally Omitted]

5.6 Detailed Design Review. Harris shall ensure that the Detailed Design Review (“DDR”) phase will commence at a mutually acceptable time after the Effective Date and conclude as expeditiously as reasonably possible so as to allow and maintain adherence to the Project Schedule. During the DDR, Harris’s Project Team will meet with County’s project team on one or multiple occasions to review the New System design, technical data and Project Site specific information (including, if applicable, any proposed tower sites). The Work shall be defined in more detail in the Detailed Design Documents and as amended from time to time in writing by the Parties. The Detailed Design Documents are not incorporated into this Agreement, but shall supplement the SOW for implementation or logistics. At the conclusion of the DDR, Harris will provide County with the following documents for review and approval by County:

5.6.1 Final Site Plans (identifying the mutually agreed upon final Sites as well as the portion of the Work to be performed for the development and use of each Site);

5.6.2 Project Schedule;

5.6.3 Shelter Floor Plan Drawings;

- 5.6.4 Rack Elevation Drawings;
- 5.6.5 System Block and Level Diagrams;
- 5.6.6 Power and HVAC Loads;
- 5.6.7 Antenna Network Diagrams;
- 5.6.8 Site Frequency Plans;
- 5.6.9 TX Combiner Plan by Site;
- 5.6.10 Network Backhaul Plans;
- 5.6.11 A single, user-friendly, responsibility matrix in the DDR that reflects the various responsibilities in the SOW for each of the Parties; and
- 5.6.12 Any other documents as mutually agreed upon by the Parties.

County shall have up to fourteen (14) calendar days to conduct its review of the above Detailed Design Documents and accept (or reject with explanations and instructions for Harris to resubmit) each. The approval of the Detailed Design Documents by the County shall not be unreasonably withheld, conditioned or delayed. If the County fails to accept or reject the Detailed Design Documents within thirty (30) calendar days, then such are deemed approved.

5.7 System Implementation Communications. Harris and County shall jointly establish a plan that defines: (i) the regular meetings to be held; (ii) the working sessions that may be needed to plan sub-tasks; and (iii) other communications activities. The plan will include at a minimum: (a) one or more DDR meetings to communicate the final engineering design; (b) periodic status meetings at which the parties' Project Managers and other project participants will provide updates; (c) conference calls with Harris's and County's project teams to discuss tasks, assign responsibility and establish schedules; (d) workshops or working sessions that may be needed throughout the Project to plan subtasks; and (e) monthly reports to be provided by Harris to County's Project Manager describing Work in progress and Work accomplishments to date.

5.8 County Approvals. County will review and respond with reasonable promptness to all submittals or other items requiring its approval under this Agreement. For all such submittals or other items County will provide Harris with either: (i) written notification of County's approval; or (ii) a written notification of conditional approval subject to Harris providing prompt correction of any noted deficiency; or (iii) in the case of a submittal that does not meet the requirements of the Agreement, a written notification of County's disapproval. County's disapproval notification will be provided with reasonable detail or description to sufficiently inform Harris of the basis on which the submittal was determined to be unacceptable. County agrees that failure to provide approval, conditional approval, or non-approval of a submittal for which its approval is required

within twenty (20) calendar days of receipt of the submittal from the Harris shall constitute and be deemed approval of that submittal. Because a submittal may be deemed approved, the failure by County to provide its approvals, conditional approvals, and disapprovals as described in this Section 5 and in Section 16 are not Excusable Delay events as described in Section 12.

The Parties agree that the County approval process in this Section 5.8 does not apply or pertain to the Acceptance Test procedures set forth in *Section 16 - Acceptance*.

5.9 System Implementation Obligations. The following subsections apply to the Work to be performed under the Agreement:

5.9.1 Project Management and Implementation Plan. County and Harris each agree to perform their respective tasks and obligations set forth in this Agreement including, without limitation, tasks pertaining to obtaining permits and licenses and performing surveys of the Project Sites, general Project Site-related responsibilities, and responsibilities to provide materials. The County's obligations set forth in the SOW shall be performed by County in a timely and commercially reasonable manner in accordance with the Project Schedule, or as otherwise mutually agreed upon by County and Harris, to allow Harris to timely perform its obligations under this Agreement. County shall identify and disclose to Harris any and all known problems or conditions at all Project Sites of which County is aware that may affect the Work to be performed by Harris under this Agreement.

5.9.2 Access. Beginning as of the Effective Date, County shall provide access, at no cost to Harris and upon reasonable prior notification from Harris, to all owned, leased, or licensed Project Sites at reasonable times, and with an escort (if required) provided by County. County shall ensure sufficient room, within reason, on each Project Site for the installation vehicles used by Harris. County shall issue temporary identification cards to Harris' personnel and its authorized subcontractors, if required, for access to any of the Project Sites. Harris shall comply with all site access policies and safety regulations. County shall provide Harris any written policies and regulations that are unique to a particular site.

5.9.3 Changes in Sites. Any Project Sites where Harris will operate and perform the System delivery and installation under the terms of this Agreement must be approved by County, which approval shall not be unreasonably withheld, delayed or conditioned. If County directs an addition to, removal from, or modification of the Project Sites identified in the SOW that affects Harris' costs or the Project Schedule or New System performance, such change shall entitle Harris to receive a change order and each Party shall attempt, in good faith, to fully negotiate and execute such change order prior to the commencement of Work at the Project Site.

5.9.4 County Work. County acknowledges and agrees that, pursuant to the terms of the SOW, County is solely responsible for certain work (including but not limited to site preparatory services per the SOW), analysis, testing and certain other obligations (collectively, the "County SOW Obligations"). Harris shall have the right to inspect all work completed by the County, the results of any analysis or testing and all other items or services required as part of or in relation to the County SOW Obligations and if Harris identifies any deficiencies with the foregoing work, the County will be provided an opportunity to cure the outstanding issues within a

reasonable length of time. Harris will provide County with either: (i) written notification of Harris's approval; or (ii) a written notification of conditional approval subject to County providing prompt correction of any noted deficiency; or (iii) in the case of an item that does not meet the requirements of the Agreement, a written notification of Harris's disapproval. Harris's disapproval notification will be provided with reasonable detail or description to sufficiently inform County of the basis on which the submittal was determined to be unacceptable. County shall grant Harris access to all Project Sites and provide Harris with the necessary documentation to allow Harris to complete any required inspection. If, after inspection, any County SOW Obligation has not been completed correctly and at the time required by the Project Schedule, Harris may suspend further performance under this Agreement, but only to the extent necessary, until the County SOW Obligation is completed and the time period between the suspension date and the completion of the applicable County SOW Obligation shall be deemed an Excusable Delay pursuant to Section 12 of this Agreement.

5.9.5 Frequency FCC Licensing. Harris will provide the New System technical information set forth in the SOW for the preparation of the FCC frequency license applications. County will be responsible for preparing, reviewing, approving, and submitting the FCC frequency license applications and ultimately for obtaining all FCC frequency licenses needed for the System. Except as set forth in this Agreement, Harris has no responsibility or obligation to secure licensed frequencies from the FCC for use with the New System.

5.9.6 Contractor Licenses. Harris is responsible for obtaining all contractor licenses required for the performance of the Work. Harris warrants that its personnel and subcontractors have the necessary experience, skills, and licenses to perform the Work under this Agreement.

5.9.7 Federal Aviation Administration ("FAA"). To the extent applicable, the County will be responsible for obtaining all FAA approvals. Harris will provide the assistance set forth in the SOW for obtaining FAA approvals.

6. MAXIMUM AGREEMENT SUM

6.1 Subject to the terms and conditions of this Agreement, the amount payable to Harris to provide the New System to County is a fixed flat fee in the amount of Seventeen Million Three Hundred Thousand Dollars (\$ 17,300,000) (the "Maximum Agreement Sum"), payable no earlier than Harris' successful completion and County acceptance of the following milestones:

- | | | |
|--------------|-------------|--|
| 6.1.1 | \$8,000,000 | Effective Date; |
| 6.1.2 | \$3,400,000 | Fixed Equipment Installation, as per SOW Section 3.4.10; |
| 6.1.3 | \$3,400,000 | Infrastructure Acceptance, as per SOW section 3.4.13; |
| 6.1.4 | \$2,500,000 | Final Acceptance, as per SOW Section 8. |

6.2 Notwithstanding any provision to the contrary, whether expressly or by implication, the Maximum Agreement Sum is to be paid by SprintNextel from the Reconfiguration Proceeds only;

Harris does not have any direct recourse for payment of the Maximum Agreement Sum from or against the County.

6.3.1 For the payment milestone in Sections 6.1.2 and 6.1.3, if Harris' performance is delayed for more than sixty (60) days, through no fault of its own but by the County, then the County shall deliver the Incumbent Acknowledgment to SprintNextel for payment to Harris. Nothing in the foregoing shall operate to release Harris from its responsibility under this Agreement.

6.3.2 A fifty-percent (50%) partial payment of amounts due at Fixed Equipment Installation (Sec. 6.1.2) and Infrastructure Acceptance (Sec. 6.1.3) shall be approved by the County and deemed payable by SprintNextel upon completion of fifty percent (50%) of the applicable Work.

6.4 The Parties acknowledge that the County's outside counsel legal fees, not to exceed \$200,000 shall be paid by SprintNextel as set forth in Schedule C of the FRA.

6.5 The Parties acknowledge that the County shall be paid \$2,500,000 by SprintNextel as set forth in Schedule C of the FRA.

7. INVOICING AND PAYMENT

7.1 Payment Terms and Conditions. Harris understands and agrees that: (i) all payments of any and every portion of the Maximum Agreement Sum will be made by SprintNextel on behalf of the County, and (ii) in order to receive payment of any portion of the Maximum Agreement Sum amount from SprintNextel, Harris must comply with the terms and conditions of this Agreement as well as with certain terms and conditions imposed by SprintNextel, the FCC, and the TA.

7.2 Invoicing and Payment.

7.2.1 Subject to the terms and conditions of this Agreement, SprintNextel is to make payments of the Maximum Agreement Sum, on behalf of the County, directly to Harris in accordance with vendor payment procedures set forth in the FRA.

7.2.2 On the Effective Date of this Agreement, Harris will submit an invoice to the County per Section 6.1.1 for the initial milestone payment for its review and approval prior to submittal to Sprint Nextel in accordance with the FRA. County will review such invoice in accordance with the provisions of Section 7.3 (Incumbent Acknowledgement).

7.3 Incumbent Acknowledgement. Before an invoice for a payment will be paid, SprintNextel requires that the County provide an "Incumbent Acknowledgement" using the Incumbent Acknowledgement Form attached hereto as **Attachment E**. At the same time Harris provides an invoice to Sprint/Nextel, Harris shall also deliver a copy of the invoice to the County so that the County will be able provide the required Incumbent Acknowledgement both to SprintNextel and to Harris. Within ten (10) business days of receipt of Harris' invoice, County shall issue the Incumbent Acknowledgement or if County reasonably determines that it is unable

to provide the required Incumbent Acknowledgement, County will notify Harris in writing of the reasons for that determination.

7.4 Invoices. In order to be paid, invoices must include the following information:

- 7.4.1** Harris' name (must match the name submitted on the "Payee Setup Form" submitted by Harris to SprintNextel)
- 7.4.2** Harris' "remit to" address
- 7.4.3** Harris' representative's name and contact information (for questions about the invoice)
- 7.4.4** County's name
- 7.4.5** Deal Number (to be provided by SprintNextel)
- 7.4.6** A detailed list of goods and/or services or milestones for which Harris is requesting payment (broken out by line item) as well as the total sum
- 7.4.7** Applicable sales tax
- 7.4.8** Invoice date
- 7.4.9** Invoice number

7.5 Payment by SprintNextel. As provided under the FRA, within thirty (30) calendar days after the SprintNextel's receipt of (i) Harris' invoice and (ii) the related Incumbent Acknowledgement, Sprint/Nextel will pay the invoice on behalf of County, assuming that Harris has complied with all applicable terms and conditions of payment set forth in this Agreement as well as those terms and conditions of payment imposed by SprintNextel, the FCC and the TA. Harris agrees to accept direct payment from SprintNextel on behalf of County and apply such payment to the Maximum Agreement Sum.

7.6 SprintNextel Letter of Credit. Sprint/Nextel has obtained an irrevocable letter of credit that assures that funds will be available to fund the 800 MHz band reconfiguration required by the Orders (the "Letter of Credit"). The TA may issue draw certificates to the trustee administering the Letter of Credit (the "Trustee") for payment of the reconfiguration costs set forth in this Agreement if SprintNextel defaults on its obligation under the Orders to pay County's reconfiguration costs. Harris agrees to look solely to the Letter of Credit as security for payment of any amounts not paid by SprintNextel when due under this Agreement and hereby waives its rights of lien, and agrees not to file any liens, arising out of the performance of the Work against County's premises or any property belonging to County. If Sprint Nextel defaults on its payment obligations to Harris, and the County has provided the required Incumbent Acknowledgement to SprintNextel, then the County agrees to cooperate with the Harris in its attempts to draw down on the Letter of Credit and such obligation shall survive termination of

this Agreement for a period of one (1) year, provided, however, such cooperation shall not require County to initiate any litigation over non-payment by Sprint Nextel. Nothing contained in this section shall be deemed to limit any other remedies available to Harris at law or at equity against Sprint Nextel. Harris shall not suspend Work to the County as the result of non-payment from Sprint Nextel if such suspension shall cause or otherwise result in a detrimental effect to the public safety of County personnel or its citizens.

7.7 Audit. The Orders provide that after Work is completed, the TA will perform an audit of County's records and "true up" procedure, whereby the reconfiguration work actually performed will be examined relative to the Work described in the County's cost estimate, and any payment adjustments will be calculated and made. During this true up procedure, Harris and County will work together in good faith and will act reasonably in order for Harris to accurately account for the invoices from and payments to Harris. If necessary, the Parties will execute a change order to conform the scope of the actual Work performed to the scope of the Work.

8. TAXES

In addition to payment of the Maximum Agreement Sum, the parties acknowledge and agree that SprintNextel shall be responsible for payment of any present or future sales, use, excise, value-added, or other similar tax, if any, that is applicable to the Work furnished hereunder.

9. CHANGE ORDERS AND REQUIRED CHANGES

9.1 County Requested Changes. County may seek to make changes in the SOW or in the time or place of performance of the Work. If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this Agreement, Harris shall be entitled to an equitable adjustment in the Maximum Agreement Sum, the Project Schedule, or both. Any such adjustment in the Maximum Agreement Sum or Project Schedule shall be mutually satisfactory to County and Harris, and if applicable, to Sprint Nextel and the TA. Price increases and/or extensions of time shall not be binding upon County unless evidenced by a modification to this Agreement signed by the parties hereto in accordance with Section 27. Harris will not be required to accomplish the agreed-upon changes until a mutually agreed upon change order approved in writing is received by Harris ("Change Order"), and if applicable, also approved by SprintNextel.

9.2 County Delays In Performance. To the extent that County fails to timely perform its obligations under the responsibility matrix in the SOW or otherwise under this Agreement (including but not limited to obtaining the rights to use Project Sites) and such failure has a material impact on the cost of Work performed by Harris under the Agreement and/or the Project Schedule, the Parties agree that Harris shall be entitled to an equitable adjustment to the Project Schedule and/or the Maximum Agreement Sum and that a Change Order shall be agreed to by the Parties.

9.3 Concealed Conditions. If, following County's acceptance of the Detailed Design Documents, Harris encounters a concealed condition (of which it had no reason to be previously aware) at one or more Project Sites, then the Parties agree to work together to determine the best

course of action and agree to negotiate in good faith a Change Order and an equitable adjustment to the Project Schedule and/or the Maximum Agreement Sum.

9.4 Frequency Support and Frequency Changes. As set forth above, Harris shall reasonably support County in submitting the County's frequency licensing applications for the New System to the applicable regional governing authorities and the FCC. In the event that, after all commercially reasonable efforts and due diligence have been expended, the County cannot obtain all of the necessary approvals and frequency licenses for the frequency plan as described in this SOW and this Agreement, such event shall be treated as an Excusable Delay event pursuant to Section 12 for which, to the extent necessary, an extension to the Project Schedule shall be granted, and Harris will diligently and expeditiously prepare and provide to County a System re-design for its review and approval. In the event that County and Harris cannot in good faith mutually agree on the System re-design, either party may then terminate the Agreement on thirty (30) calendar days written notice to the other Party. The Parties agree that Harris may be entitled to an equitable adjustment to the Maximum Agreement Sum and/or the Project Schedule for Harris's Work on any such New System re-design.

9.5 Hardware Changes. In the event of any change in the Hardware to be provided by Harris as a result of the imposition after the Effective Date of this Agreement of any requirements by any federal, state, or local government, an equitable adjustment in the Maximum Agreement Sum shall be made to reflect any added cost and expense of such change and the Agreement shall be modified in writing accordingly. Subject to its obligation to fulfill its obligations set forth in this Agreement, Harris reserves the right to change or to discontinue any of the materials to be provided under this Agreement provided that Harris agrees to make available to the County a functionally equivalent replacement item of hardware or product equal to or better than the discontinued.

9.6 Unforeseen Changes. Notwithstanding anything contained in this Section 9 to the contrary, the Parties represent and warrant that to the best of their individual and mutual investigation, knowledge, information and belief, the *Attachment B - SOW* attached hereto reasonably anticipates and contemplates all engineering, design, and scope required for Harris to reconfigure County's System for operation on the replacement frequencies. Without limiting the foregoing, the Parties understand and agree that there may be unanticipated and/or unforeseen events and/or circumstances that may require additional work to successfully perform the Work that was not contemplated in the SOW. In the event of such unanticipated or unforeseen event or circumstance, the Parties agree to negotiate a change order in good faith to successfully accomplish any such work and to make an equitable adjustment to the Maximum Agreement Sum and/or the performance schedule.

9.7 Frequency Assignment Delays. Neither Party shall be liable for any delay attributable to the failure or inability of one or more Mexican licensees to clear the NPSPAC Replacement Frequency that prevents the County from cutting over to the new NPSPAC Replacement Frequencies, and such delay shall be treated as an Excusable delay under Section 12.

10. SUBCONTRACTORS

Nothing herein shall prohibit Harris from subcontracting any or all of its duties and obligations hereunder, provided however, (1) Harris shall deliver to County a list of contractors Harris intends to retain and County shall have the right to advance approval, which shall not be unreasonably withheld, conditioned, or delayed, of one or more subcontractors so designated by Harris, and (2) Harris is and remains ultimately responsible for any and all duties and obligations, including those subcontracted. In no event shall the existence of a subcontract release or reduce the liability of Harris to County for any Work. Harris shall be liable for any loss or damage to County, including but not limited to personal injury, physical loss, harassment of County employees, or violations of the Confidentiality sections of this Agreement occasioned by the acts or omissions of Harris' subcontractors, their agents or employees.

11. SOFTWARE LICENSE

As described in the Software License Agreement attached hereto as **Attachment D**, Buyer is granted a perpetual, non-exclusive license to use the software provided by Harris only in conjunction with the New System provided under this Agreement.

12. EXCUSABLE DELAYS

12.1 Neither Harris nor the County shall be liable for delays in delivery or failure to perform to the extent resulting from: (1) causes beyond Harris' or the County's reasonable control, (2) Acts of God, acts (including failure to act) of any governmental authority (de jure or de facto), wars (declared or undeclared), riots, revolutions, strikes or other labor disputes, fires, floods, sabotage, nuclear incidents, earthquakes, storms, epidemics, (3) Harris' or the County's inability to timely obtain necessary materials, items, components or services from suppliers who are affected by the foregoing circumstances, or (4) the failure of Harris or the County to perform its obligations hereunder in a timely manner (each an "Excusable Delay"). The foregoing shall not apply to any of such causes that exist at or before May 14, 2013.

12.2 In the event of any delay or failure excused by this Section 12, either party shall as soon as practical notify the other party, and shall at the same time, or at the earliest practical date after such notice, specify the revised delivery and performance dates. In the event of any delay or failure excused by this Section, either Party shall as soon as practical notify the other Party and shall at the same time, or at the earliest practical date after such notice, specify the revised delivery and performance dates. In the event of such delay, the time of delivery or of performance shall be extended for a reasonable time period. Harris agrees to use commercially reasonable efforts to minimize any potential costs resulting from any delay or failure excused by this Section. County agrees that it will be responsible for any such additional costs in the event (i) such costs cannot be avoided pursuant to the immediately preceding sentence, and in the further event, (ii) such costs are the result of a hard and absolute deadline imposed by the FCC or TA with respect to the construction, installation and testing of the System in order for other licensees to complete and/or progress with their respective rebanding projects. In such events, County agrees to negotiate in good faith with Harris to compensate for the time lost by Harris by reason of the delay and any increase or decrease in the cost of performance of the work under

this Agreement and shall be the subject of an equitable adjustment to the Maximum Agreement Sum, in accordance with Section 9 above.

13. INSURANCE

13.1 Insurance To Be Provided. Harris shall maintain in force at all times during the course of this Agreement not less than the following insurance coverage with insurers authorized to do business in the State of California:

13.1.1 Commercial General Liability insurance (providing scope of coverage equivalent to ISO policy form CG 00 01), naming County and its Agents as an additional insured, with limits of not less than:

General Aggregate:	\$2 million
Products/Completed Operations Aggregate:	\$1 million
Personal and Advertising Injury:	\$1 million
Each Occurrence:	\$1 million

13.1.2 Automobile Liability insurance (providing scope of coverage equivalent to ISO policy form CA 00 01) with limits of not less than \$1 million for bodily injury and property damage, in combined or equivalent split limits, for each single accident. Insurance shall cover liability arising out of Harris's use of autos pursuant to this Agreement, including owned, leased, hired, and/or non-owned autos, as each may be applicable.

13.1.3 Workers Compensation and Employers' Liability insurance or qualified self-insurance satisfying statutory requirements, which includes Employers' Liability coverage with limits of not less than \$1 million per accident. If Harris will provide leased employees, or, is an employee leasing or temporary staffing firm or a professional employer organization (PEO), coverage also shall include an Alternate Employer Endorsement (providing scope of coverage equivalent to ISO policy form WC 00 03 01 A) naming the County as the Alternate Employer, and the endorsement form shall be modified to provide that County will receive not less than thirty (30) days advance written notice of cancellation of this coverage provision. If applicable to Harris's operations, coverage also shall be arranged to satisfy the requirements of any federal workers or workmen's compensation law or any federal occupational disease law.

13.1.4 Professional Liability/Errors and Omissions. Insurance covering Harris's liability arising from or related to this Agreement, with limits of not less than \$1 million per claim and \$2 million aggregate. Further, Harris understands and agrees it shall maintain such coverage for a period of not less than three (3) years following this Agreement's expiration, termination or cancellation.

13.2 Certificate of Insurance. No later than ten (10) calendar days from the Effective Date of this Agreement, Harris shall provide County with a certificate of insurance evidencing the insurance set forth in this Section 13, provided that all binders shall be effective as of the Effective Date.

14. GRATUITIES

Harris and its employees shall not, with the intent to influence the recipients in the conduct of their official duties, extend any gratuity or special favor of monetary value to any officer, employee or other representative of County.

15. TITLE AND RISK OF LOSS

15.1 Except as set forth in Section 15.2 and 15.3, title and risk of loss of any equipment to be provided by Harris as part of the Work shall pass to County upon delivery to County. County shall retain any equipment that has been replaced by the new equipment and, upon notice from Harris, deliver the replaced equipment to SprintNextel.

15.2 The title and risk of loss remains with Harris for any equipment rejected by the County in good faith.

15.3 The risk of loss remains with Harris for any equipment or Hardware that Harris will store for the County prior to delivery.

16. ACCEPTANCE

16.1 Acceptance Testing. Harris shall notify County that the New System is ready for Acceptance Tests (as defined in the SOW) at least ten (10) calendar days before commencement of the Acceptance Tests. County and Harris shall jointly commence the Acceptance Tests on the date specified in Harris' notice (or other mutually agreeable date) and a representative of Harris and a representative of County shall sign off on the form provided as part of the Acceptance Test procedure whether each item of the Acceptance Test was passed or failed. If the New System does not fulfill the requirements of the Acceptance Tests, Harris shall correct the defects at no additional cost to County as soon as practicable. Upon correction of the defects, the Acceptance Tests for the applicable part of the New System shall be repeated in accordance with the procedures set forth in this Section 16. If within thirty (30) calendar days after the conclusion and passing of an Acceptance Test or Acceptance Tests, the County refuses to sign off on the forms provided as part of the Acceptance Test(s) that the Acceptance Tests have been passed, then the portion of the New System covered by those Acceptance Tests shall be deemed accepted by County. Successful completion of the Acceptance Tests, excluding punch-list items, is the sole criterion for New System acceptance and the initiation of the warranty period. Final system acceptance shall occur when the Work, including all products and equipment as described in the SOW, have been furnished, delivered, installed and successfully passed testing.

16.2 Commencement of System Use. Notwithstanding the acceptance testing of the New System set forth in Section 16.1 above, if, prior to System Acceptance, County commences use of any portion of the New System for its intended purpose, other than for the express purpose of training or testing as mutually agreed upon by Harris and County in writing, the applicable portion of the New System put into use shall be deemed accepted by County. The warranty period for the applicable portion of the New System put into use shall be deemed to have commenced concurrently with the commencement of use of the applicable portion of the New

System for its intended purpose. The use of the applicable portion of the New System for its intended purpose shall be deemed to have occurred when County commences to use and rely primarily on the applicable portion of the New System for its communications.

16.3 Acceptance Date. As used in the Agreement, “Acceptance” shall mean acceptance of the New System by the County and shall be deemed to occur upon the earlier of the date on which the New System is accepted as set forth in Section 16.1 or 16.2 above (the “Acceptance Date”).

16.4 Use of a Punch List. Most if not all of the Acceptance Tests may be successfully completed with only a minor number of punch list items remaining to be completed. In such event, County and Harris shall mutually and reasonably agree upon the punch list items to be completed, the value of those items and that conditional acceptance of the New System has occurred. For the purpose of initiating the warranty period and satisfying the Project Schedule requirements, conditional acceptance shall constitute Acceptance of the applicable specific portion or phase of the New System. Conditional acceptance shall not, however, release Harris from its obligations to complete the remaining punch list items by the dates set forth on the punch list schedule.

17. WARRANTIES

17.1 Hardware and Services Warranty. Harris warrants for the periods of time set forth below the Hardware and accessories shall be free from defects in material and workmanship, and that Work shall be of a good and professional manner, and shall conform to its published specifications and the Documentation per the following:

17.1.1 Infrastructure Hardware. For a period of one (1) year commencing on Final System Acceptance.

17.1.2 Terminal Hardware. For a period of one (1) years commencing on the earlier of (1) completion of subscriber transition, or (2) the project schedule date in the SOW. (*See*, SOW Section 3.4.13).

17.1.3 Work. For Work relating to the Infrastructure Hardware, a period of ninety (90) days commencing on Final System Acceptance. For Work relating to the Terminal Hardware, for a period of ninety (90) days coterminous with the deployment of the Terminal Hardware.

17.1.4 Accessories. For any and all accessories, for ninety (90) calendar days from deployment, or whatever longer warranty period available from the accessories manufacturer, if any, starting on the date the applicable Infrastructure Hardware or Terminal Hardware unit Warranty Period starts.

17.2 Battery Warranty. For one (1) year from deployment, each battery supplied by Harris shall be deemed defective if: (i) the battery does not meet the required form, fit, or function per the published specifications, (ii) the battery capacity is less than 80% of rated capacity, or (iii) the battery develops leakage. Replacement batteries shall be warranted only for the remaining

unexpired warranty period of the original battery. This battery warranty becomes void if:

17.2.1 The battery has been subjected to any kind of misuse, detrimental exposure, or has been involved in an accident, or

17.2.2 The battery is used in equipment or service other than the radio equipment for which it is specified.

17.3 Warranty Remedy. During the warranty periods in Section 17.1 and 17.2, for failures covered by warranty, Harris's sole obligation and County's exclusive remedy under this warranty shall be the correction by Harris of the failure at Harris's option: (i) by repairing any defective component of the Hardware, or (ii) by furnishing any necessary repaired or replacement parts, or (3) by the redoing of the faulty installation. Any such failure, or the repair or replacement of the defective component or the redoing of any installation, shall not extend the warranty period. Harris will be responsible for all charges incurred in returning defective parts to Harris's plant and shipping repaired or replacement parts to County. All warranty labor must be performed by an authorized service group approved by Harris either at its place of business, for mobile or portable equipment, or at the County's location for fixed location equipment should Harris determine that it is not feasible to return the fixed location equipment to Harris's authorized service group. While Harris is undertaking any warranty remedy, Harris shall provide loaner Infrastructure Hardware to the County to ensure that the New System performance is not compromised.

17.4 Any and all claims for breach of warranty under Section 17.3 are conclusively deemed waived unless notice of the defects or nonconformance is given to Harris in writing within the warranty period or from fifteen (15) days from discovery by the County, whichever is later, so long as the failure occurred during the warranty period. Notwithstanding the foregoing, the County retains all applicable rights and remedies after the expiration of the warranty.

17.5 Warranty for Additional Items Purchased. Any additional purchases of items of Hardware and installation services purchased by County and delivered or performed by Harris after System Acceptance shall be warranted on the same terms and conditions set forth herein.

17.6 Warranty Exclusions. Harris's obligations shall not apply to: (1) Hardware or components thereof which are normally consumed in operation; or (2) defects which are the result of improper storage or improper use or improper installation, maintenance or repair services performed by persons other than Harris or an authorized service group approved by Harris; or (3) Hardware which has been subjected to any other kind of misuse or detrimental exposure or has been involved in an accident, or (4) Hardware or installations altered or repaired without Harris's prior written consent by any person other than Harris or an authorized service group approved by Harris.

17.7 Software Warranty of Non-Infringement. Harris warrants that the County's use of the New System, and all software and firmware therein, shall not infringe on any third party intellectual property rights.

17.8 THE WARRANTIES AND REMEDIES SET FORTH IN THIS AGREEMENT CONSTITUTE THE ONLY WARRANTIES WITH RESPECT TO THE NEW SYSTEM, INCLUDING ALL HARDWARE, SOFTWARE AND WORK, AND ARE THE COUNTY'S EXCLUSIVE REMEDIES DURING THE WARRANTY PERIOD IN THE EVENT SUCH WARRANTIES ARE BREACHED. THEY ARE IN LIEU OF ALL OTHER WARRANTIES WHETHER WRITTEN, ORAL, EXPRESS, IMPLIED, OR STATUTORY INCLUDING, WITHOUT LIMITATION, THE WARRANTY OF MERCHANTABILITY AND THE WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL HARRIS BE LIABLE TO THE COUNTY FOR SPECIAL, CONSEQUENTIAL OR INDIRECT DAMAGES INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS OR REVENUES.

18. TERMINATION FOR DEFAULT

18.1 If either Party is in material breach of this Agreement, then other Party may declare a default by serving written notice to the other Party setting forth the basis for declaring the default (the "Default Notice").

18.2 Upon receipt of the Default Notice, the subject Party shall, as soon as reasonably possible within forty-five (45) calendar days, fully cure the default (the "Standard Cure Period").

18.3 If it will not be possible to cure the default within the Standard Cure Period, then the defaulting Party must, before expiration of the Standard Cure Period, deliver a written cure plan that contains, inter alia, a mutually-agreed extension (the "Extended Cure Period").

18.4 Notwithstanding Sections 18.2 and 18.3, in the event of a situation where public safety is at risk, then the defaulting Party shall cure immediately or as soon as possible with all deliberate speed (the "Emergency Cure Period").

18.5 If a default remains uncured at the expiration of the applicable Standard Cure Period, the Extended Cure Period, or the Emergency Cure Period, then the Party that served the Default Notice may exercise any or all applicable rights and remedies under this Agreement, at law, and/or in equity, all of which are cumulative and not exclusive.

19. CONFIDENTIALITY

19.1 Confidentiality Obligation. During the term of this Agreement, it is anticipated that one party (hereafter the "Disclosing Party") may disclose to the other party (hereafter the "Receiving Party") information, which the Disclosing Party considers proprietary and confidential. Accordingly, with respect to any specification, drawings, sketches, models, samples, tools, technical information, confidential business information or data, in written or other tangible form which (1) has been designated in writing by the Disclosing Party as confidential or proprietary, or (2) is of the type that the Receiving Party customarily treats as confidential or proprietary, and which is furnished by the Disclosing Party to the Receiving party in contemplation of or under this Agreement (hereinafter "Information"), the Receiving Party shall treat such Information, for a period of two (2) years after the Effective Date of this Agreement, as confidential information

with the same degree of care as the Receiving Party affords to confidential information of its own of a similar nature and shall not reproduce any such Information, in whole or in part, except as specifically authorized in writing by the Disclosing Party.

19.2 Exceptions. The provisions of the preceding subsection shall not apply to any Information which:

- (i) is or shall become publicly available without breach of this Section 19 on the part of the Receiving Party;
- (ii) is already known by the Receiving Party prior to receipt from the Disclosing Party;
- (iii) is independently developed by the Receiving Party without use or reference to the information provided by the Disclosing Party;
- (iv) is rightfully obtained by the Receiving Party from third parties without restriction or obligation on such third parties to maintain the confidentiality of such information; or
- (v) although it may be Confidential Information is still required to be disclosed pursuant to any freedom of information, public records or similar laws or pursuant to any governmental or judicial subpoena or order provided, however, that in each such event the Receiving Party shall give the Disclosing Party prompt and prior written notice of such obligation to disclose and shall allow the Disclosing Party, as permitted by law, an opportunity to take such actions and steps either to oppose or to limit such obligation to disclose the information.

19.3 Survival. The provisions of this Section 19 shall survive the expiration or termination of this Agreement.

20. INDEMNIFICATION

20.1 Indemnification by Harris. Notwithstanding any provision of this Agreement to the contrary, whether expressly or by implication, Harris shall indemnify, defend, and hold harmless the County and its board members, officials and employees (the “County Indemnified Parties,” and each a “County Indemnified Party”) from and against all third-party liability, including but not limited to claims, demands, actions, losses, damages, costs or expenses (including reasonable attorney and legal fees), to the extent arising from or in connection with willful misconduct or negligent acts or omissions of Harris or Harris’ officers, agents, employees or subcontractors. County agrees to provide Harris with reasonable notice in writing of any third party claim, demand or cause of action for which County or a County Indemnified Party will request indemnification from Harris. County and the County Indemnified Parties will provide Harris with the necessary information and assistance to defend or settle such claim, demand, or cause of action.

20.2 Indemnification by County. Notwithstanding any provision of this Agreement to the contrary, whether expressly or by implication, County shall indemnify, defend, and hold

harmless Harris and its board members, officers and employees (the “Harris Indemnified Parties”, and each a “Harris Indemnified Party”) from and against all third-party liability, including but not limited to claims, demands, actions, losses, damages, costs or expenses (including reasonable attorney and legal fees), to the extent arising from or in connection with willful misconduct or negligent acts or omissions of the County or County’s officials, officers, employees, agents and subcontractors. Harris agrees provide the County with reasonable notice in writing of any third party claim, demand or cause of action for which Harris or a Harris Indemnified Party will request indemnification from County. Harris and the Harris Indemnified Parties will provide County with the necessary information and assistance to defend or settle such claim, demand or cause of action.

20.3 Section 20.2, whether expressly or by implication, shall not constitute a waiver by the County of any governmental immunities or claims requirements, including but not limited to those under California *Government Code* section 900 *et seq.*, all of which are hereby categorically reserved.

20.4 The obligations, rights, and remedies of this Section 20 shall survive the expiration or termination of this Agreement.

21. INTELLECTUAL PROPOERTY INDEMNIFICATION

21.1 Intellectual Property Rights. Except as expressly and specifically set forth in this Agreement, nothing in this Agreement shall be construed as:

- (i) Conferring a right to County to use in advertising, publicity or otherwise any trademark or trade name of Harris; or
- (ii) Granting to County by implication, estoppels, or otherwise any licenses or rights under patents of Harris.

21.2 Intellectual Property Infringement Indemnification. Harris at its own expense shall indemnify and defend, or may settle, any suit or proceeding against County so far as based on a claimed patent, copyright, or trademark/trade dress infringement, as well as infringement claims resulting from the County use of the software provided under *Attachment D – Software License Agreement* (hereinafter, “IP Infringement”). If, in any IP Infringement claim, demand, or action relates to or effects County’s continued use of the New System Harris shall, at its expense and option, either: (1) procure for County the right to continue using the New System, or (2) modify the New System so that it becomes non-infringing, or (3) replace the New System or portions thereof so that it becomes non-infringing, and (4) be solely responsible for any and all liability for the County’s past infringing use of the New System.

21.3 Notification. If the County receives notice of an IP Infringement from a third-party claimant asserting that the New System, or any part thereof, infringes on their intellectual property, then County agrees to provide Harris with reasonable notice in writing of any third party claim, demand or cause of action for which County or a County Indemnified Party will request indemnification from Harris. County will provide Harris with the necessary information

and assistance for Harris to assume the defense or to settle such claim, demand, or cause of action, subject to County approval, which shall not be unreasonably withheld, conditioned, or delayed.

21.4 Exclusions. The preceding indemnification requirements in Section 21.2 shall not apply to the use of the New System in conjunction with any other apparatus or material not supplied by Harris to the extent that such conjoined use causes the alleged infringement. As to any portion of the New System or use described in the preceding sentence, Harris assumes no liability whatsoever for patent infringement.

22. LIMITATION OF LIABILITY

22.1 Except for Harris' responsibility and liability to indemnify County under this Agreement, as set forth in Sections 20 (Indemnification) and 21 (IP Infringement Indemnification), and *Attachment D – Software License Agreement*, the total liability of Harris on any and all claims, whether in contract, warranty, tort (including negligence or IP Infringement) or otherwise, arising out of, connected with, or resulting from the performance or non-performance of this Agreement and any agreement resulting herefrom shall not exceed one-and-a-half times (1.5xs) the Maximum Agreement Sum.

22.2 IN NO EVENT, WHETHER AS A RESULT OF BREACH OF CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE OR IP INFRINGEMENT) OR OTHERWISE, SHALL HARRIS, OR ITS SUBCONTRACTORS OR SUPPLIERS, BE LIABLE TO THE COUNTY FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL, INDIRECT OR EXEMPLARY DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOST PROFITS, LOST SAVINGS OR LOST REVENUE OF ANY KIND.

22.3 The provisions of this Section 22 shall survive the expiration or termination of this Agreement.

23. INDEPENDENT CONTRACTOR

Harris is and shall be an independent contractor and, subject to the terms of this Agreement, shall have the sole right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this Agreement. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for the County whatsoever with respect to the indebtedness, liabilities, and obligations of Harris or any other party.

24. INTERFERENCE

Radio system coverage and performance are subject to degradation due to anomalous propagation and interference beyond the reasonable control of Harris. Harris cannot be responsible for degradation or disruption of service caused by operation of other radio systems or by natural phenomena or other interference over which Harris has no reasonable control. In the

event of a case of degradation due to interference by an outside party, Harris will provide engineering support to County at County's expense to support County's efforts in resolving the interference issue with the outside party.

25. PROHIBITED AGREEMENTS

Harris has not entered, and agrees not to enter, into any agreement or arrangement with County: (i) pursuant to which Harris agrees, in exchange or as consideration for County's selection of Harris to perform the Work, to pay or convey to County or any third party a kickback or anything else of value or to provide to County any services or equipment not required as part of or directly related to the Work at non-commercial rates or at no charge; or (ii) which includes artificially inflated prices or, Harris knows or has reason to know, is based upon a false statement of work, an inaccurate inventory count or an incorrect description of the Work, including, but not limited to, the equipment or locations to be reconfigured.

26. ASSIGNMENT; SUCCESSORS AND ASSIGNS

This Agreement shall not be assigned by either party without the prior written consent of the other party, which shall not be unreasonably withheld or delayed. Notwithstanding the above, Harris may assign this Agreement, without consent, (a) in whole or in part, to a wholly-owned affiliate or subsidiary or (b) in the event of a change of controlling ownership interest (either directly or indirectly) in Harris or in the event of merger, recapitalization, consolidation, other business combination or sale of all or substantially all of the assets of Harris. Harris shall provide to County written notice of an assignment within thirty (30) days of its occurrence.

27. AUTHORITY FOR MODIFICATIONS AND AMENDMENTS

No modification, amendment, alteration, addition, or waiver of any section or condition of this Agreement shall be effective or binding unless it is in writing and signed by authorized officers of County and Harris. Only the Harris Project Manager and County Project Manager shall have the express, implied, or apparent authority to alter, amend, modify, add, or waive any section or condition of this Agreement on behalf of their respective Party.

28. WAIVER

Failure or delay by either party to exercise any right or power under this Agreement will not operate as a waiver of the right or power. For a waiver of a right or power to be effective, it must be in writing signed by the waiving party. An effective waiver of a right or power will not be construed as either a future or continuing waiver of that same right or power, or the waiver of any other right or power.

29. SEVERABILITY

If a court of competent jurisdiction renders any provision of this Agreement (or portion of a provision) to be invalid or otherwise unenforceable, that provision or portion of the provision

will be severed and the remainder of this Agreement will continue in full force and effect as if the invalid provision or portion of the provision were not part of this Agreement.

30. NON-EXCLUSIVE REMEDIES

The remedies provided for in this Agreement shall not be exclusive but are in addition to all other remedies available under law.

31. HEADINGS AND SECTION REFERENCES

The section headings in this Agreement are inserted only for convenience and are not to be construed as part of this Agreement or as a limitation of the scope of the particular section to which the heading refers.

32. AUTHORITY TO EXECUTE AGREEMENT

Each party represents to the other party that such party has obtained all necessary approvals, consents and authorizations to enter into this Agreement and to perform its duties under this Agreement; the person executing this Agreement on its behalf has the authority to do so; upon execution and delivery of this Agreement by the parties, it is a valid and binding contract, enforceable in accordance with its terms; and the execution, delivery, and performance of this Agreement does not violate any bylaw, charter, regulation, law or any other governing authority of such party.

33. GOVERNING LAW AND VENUE

The parties acknowledge and agree that this Agreement is entered into and shall be performed in the State of California, County of Los Angeles. The validity, performance and all matters relating to the interpretation and effect of this Agreement and any amendment thereto shall be governed by the laws of the State of California, excluding its rules with respect to conflict of laws. Both County and Harris agree to exclude application of the terms and provisions of the U.N. Convention of Contracts for the International Sale of Goods and the terms and provisions of the Uniform Computer Information Transactions Act (UCITA) to this Agreement, if either were otherwise applicable.

34. NOTICES

Notices required to be given by either party to the other party must be in writing and either delivered in person or sent to the address shown below by certified mail, return receipt requested and postage prepaid or by a recognized courier service (such as Federal Express, UPS, or DHL) and will be effective upon receipt:

To Harris:

FCC Rebanding Project Manager
Harris Corporation, RF Communications Division
12860 Lynchburg-Salem Turnpike
Forest, VA 24551

With a copy that shall not constitute notice to:

Senior Counsel
Harris Corporation, RF Communications Division
221 Jefferson Ridge Parkway
Lynchburg, VA 24501

And to:

Kevin P. Joyce, Esq.
Brown Rudnick LLP
One Financial Center
Boston, MA 02110

To County:

Los Angeles County – ISD
1110 Northern Eastern Avenue
Los Angeles, CA 90063
c/o Ian Telfer

And with a copy that shall not constitute notice to:

Office of the County Counsel
500 W. Temple Street, Rm 653
Los Angeles, CA 90012
c/o Patrice Salseda, Senior Deputy

And to:

Alan Tilles, Esq.
Jeffrey W. Rubin, Esq.
Shulman Rogers
12505 Park Potomac Avenue, 6th Floor
Potomac, MD 20854

35. COMPLIANCE WITH APPLICABLE LAWS

Each Party will comply with all applicable federal, state, and local laws, regulations and rules concerning the performance of this Agreement or the use of the System. County will obtain and comply with all required FCC licenses and authorizations.

36. CALENDAR DAYS

Unless otherwise expressly specified herein, the term “days” shall mean calendar days.

37. ENTIRE AGREEMENT

This Agreement is the complete and exclusive statement of understanding between County and Harris, and supersedes any previous negotiations, prior discussions, representations, promises, understandings, proposals, agreements, warranties, relating to the subject matter of this Agreement.

[End of Text This Page]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed and intend to be legally bound thereby.

HARRIS:

HARRIS CORPORATION,
acting through its RF Communications
Division

By: _____

Name: _____

Title: _____

Date: _____

COUNTY:

COUNTY OF LOS ANGELES,
CALIFORNIA

By: _____

Name: _____

Title: _____

Date: _____

ATTEST:
Executive Officer-Clerk
of the Board of Supervisors

By_____

APPROVED AS TO FORM:
COUNTY COUNSEL
John F. Krattli

By_____

Patrice Salseda
Senior Deputy County Counsel

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed and intend to be legally bound thereby.

HARRIS:

HARRIS CORPORATION,
acting through its RF Communications
Division

By: [Signature]

Name: Monica P. Murray

Title: VP - Grass Programs

Date: 4/29/2013

Approved as to Form
By: [Signature]
Date: 4/29/13

COUNTY:

COUNTY OF LOS ANGELES,
CALIFORNIA

By: _____

Name: _____

Title: _____

Date: _____

APPROVED AS TO FORM:

COUNTY COUNSEL

John F. Krattli

By _____

Patrice Salseda
Senior Deputy County Counsel

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed and intend to be legally bound thereby.

HARRIS:

HARRIS CORPORATION,
acting through its RF Communications
Division

By: _____

Name: _____

Title: _____

Date: _____

COUNTY:

COUNTY OF LOS ANGELES,
CALIFORNIA

By: _____

Name: _____

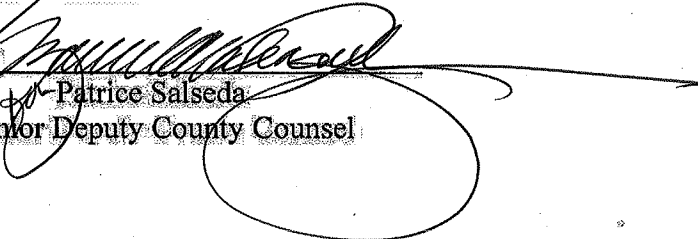
Title: _____

Date: _____

ATTEST:
Executive Officer-Clerk
of the Board of Supervisors

By _____

APPROVED AS TO FORM:
COUNTY COUNSEL
John E. Kratili

By  _____
Patrice Salseda
Senior Deputy County Counsel

FREQUENCY RECONFIGURATION AGREEMENT

THIS FREQUENCY RECONFIGURATION AGREEMENT (this "Agreement") is made as of this ____ day of _____, 2013 ("Effective Date"), by and between **Los Angeles, County of**, a governmental entity of the State of California ("Incumbent" or "Licensee"), and **Nextel West Corp.** ("Nextel"), a wholly owned indirect subsidiary of Sprint Nextel Corp., a Kansas corporation (each is referred to in this Agreement as a "Party" and collectively as the "Parties").

RECITALS

- A. On August 6, 2004, the Federal Communications Commission ("FCC") issued a Report and Order that modified its rules governing the 800 MHz band. The purpose of the Order was to reconfigure the 800 MHz band to minimize harmful interference to public safety radio communications systems in the band ("Reconfiguration").
- B. On December 22, 2004, the FCC issued a Supplemental Order and Order on Reconsideration. The August 6, 2004 and December 22, 2004 FCC orders, and any supplemental FCC Orders in the Reconfiguration proceeding or subsequent actions after the date of this Agreement, are collectively referred to as the "Order."
- C. Pursuant to the Order, Incumbent and Nextel are licensed on frequency allocations subject to Reconfiguration.
- D. Pursuant to the Order, Nextel will pay Incumbent, or on Incumbent's behalf, an amount to effect a Reconfiguration of Incumbent's affected frequency allocations ("Reconfiguration Cost"). Incumbent will certify to the Transition Administrator appointed pursuant to the Order (the "Transition Administrator") that the Reconfiguration Cost is the minimum cost necessary to accomplish rebanding in a reasonable, prudent, and timely manner in order to provide comparable facilities.
- E. Incumbent's existing 800 MHz system operates on the Incumbent Frequencies (as defined below) and will not be retuned but will instead be replaced with an Upgrade System that will operate on the Replacement Frequencies (as defined below) (the "Upgrade System"). The Parties have agreed to coordinate the Upgrade System with Incumbent's rebanding obligations. The reimbursable amount to Incumbent to effect the Upgrade System is based on the Reconfiguration Cost Incumbent would have incurred had Incumbent retuned the Incumbent Frequencies to the Replacement Frequencies in accordance with the Order. Incumbent will migrate from the Los Angeles County's EDACS system to a proposed P25 system.

FOR GOOD AND VALUABLE CONSIDERATION, THE RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED, THE PARTIES AGREE AS FOLLOWS:

AGREEMENT

1. **Frequencies to be Reconfigured:** Incumbent is the licensee under the license(s) granted by the FCC identified in Schedule A (the "Incumbent Licenses") for the operation of certain 800 MHz frequencies at the locations identified on Schedule A (the "Incumbent Frequencies"). Nextel, including its subsidiaries or affiliates, is the licensee under license(s) granted by the FCC (the "Nextel Licenses") for the operation of Specialized Mobile Radio ("SMR") systems on the frequencies and at the locations identified in Schedule B (the "Replacement Frequencies"). The

Replacement Frequencies to be identified on Schedule B, will be added to the Agreement by amendment upon receipt and acceptance by the Incumbent of the Frequency Proposal Reports from the Transition Administrator. Pursuant to the Order, Incumbent must relinquish the Incumbent Frequencies and relocate its system to the Replacement Frequencies.

2. Frequency Reconfiguration Process:

(a) On or before the Closing Date (as defined below) (i) Nextel or Incumbent will cause the modification of the Incumbent Licenses to add the Replacement Frequencies or Nextel will cause the creation of a new FCC license for Incumbent that includes the Replacement Frequencies; (ii) Incumbent will cause the assignment of the Incumbent Frequencies to Nextel or will cause the deletion of the Incumbent Frequencies from the Incumbent Licenses following Reconfiguration of Incumbent's system; and (iii) Nextel will cause the modification and/or cancellation of the FCC licenses it holds for the operation of 800 MHz frequencies that are co-channels of the Replacement Frequencies, to the extent required to meet the technical short-spacing requirements of Section 90.621(b) of the FCC's Rules, 47 C.F.R. § 90.621(b), as such rule may be amended from time to time by the FCC.

(b) The parties agree that Nextel and the Incumbent (as appropriate) will make the FCC assignment filings for the Replacement Frequencies on a future date to be determined by the parties through mutual agreement, as provided in Section 5. The Parties agree to notify Nextel and the Incumbent (as appropriate) of the FCC assignment filings in accordance with the Notice provision of this Agreement.

3. Reconfiguration Costs:

(a) Acknowledgement of Obligations. Incumbent agrees that:

(i) the cost estimate set forth in Schedule C (the "Cost Estimate") and the equipment set forth on Schedule D, sets forth all of the work required to reconfigure Incumbent's existing facilities to comparable facilities that would operate on the Replacement Frequencies in the absence of the Upgrade System;

(ii) Upon Nextel's payment in accordance with this Agreement, Nextel shall be deemed to have satisfied its obligations under the Order to pay the cost of relocating Incumbent's system from the Incumbent Frequencies to the Replacement Frequencies as though the work contemplated by the Cost Estimate, in the absence of the Upgrade System, had been performed in accordance with this Agreement; and

(iii) Incumbent acknowledges that Nextel's payment obligations under this Agreement to allow Incumbent to conduct the Upgrade System shall not exceed the Reconfiguration Cost set forth on Schedule C.

(iv) Compliance with Transition Administrator Upgrade Policy. The Parties acknowledge that the transactions contemplated herein satisfy the requirements of the Transition Administrator Upgrade Policy. In accordance therewith:

A. Incremental Funding Commitment. The Reconfiguration Cost set forth on Schedule C shall be the sole source of funding needed to accomplish the Incumbent's Upgrade System. If any further funds are required for the installation of the Upgrade System, although none are presently anticipated to be required, such funds will be approved and allocated

by Incumbent following the Transition Administrator's approval of this Agreement but prior to the commencement date of physical retuning.

B. Vendor Resources Available. Incumbent warrants that all Vendors involved in the Upgrade System have committed necessary resources to accomplishing the Upgrade System in a timely manner, and that completion of the Upgrade System will in no case exceed the time it would have taken Incumbent to reconfigure its existing 800 MHz system.

C. Use of Reconfiguration Cost. Incumbent warrants that the Reconfiguration Cost paid by Nextel to Incumbent shall be used for the purposes of effecting the Upgrade System, and for no other purpose.

D. Representation at Closing. Incumbent will, at Closing, confirm in writing that the Reconfiguration Cost paid by Nextel under this Agreement was allocated in accordance with Section 3(a)(iv)(C) of this Agreement.

E. Documentation of Reconfiguration Cost. Incumbent shall, in accordance with the terms of Section 3(b)(i) of this Agreement, provide such documentation as may be required to establish that the Reconfiguration Cost paid under this Agreement was used in accordance with Section 3(a)(iv)(C) of this Agreement.

F. Refund for Overpayment. Incumbent warrants that it will refund to Nextel, as described in Section 3(b)(i) of this FRA, any amounts paid by Nextel that exceed the Reconfiguration Cost.

G. Comparability of Facilities. Incumbent will certify that following the Upgrade System, Incumbent's resulting facilities shall be deemed comparable as the term "comparable" is defined in the FCC's rules and the Order. Incumbent shall execute such closing documentation as shall be requested by Nextel and required by either the TA or the Commission to certify the comparability of Incumbent's facilities following the System Upgrade.

H. Supplemental Information. Information required for compliance with the TA Upgrade Policy is detailed on the attached Exhibit C and shall be incorporated into this Agreement.

(b) Payment Terms. In order to facilitate the Incumbent's transition to the Replacement Frequencies, Nextel will pay the costs incurred to reconfigure Incumbent's system in an amount not to exceed the Cost Estimate. Nextel will make payments in accordance with the payment terms identified on Schedule C and as set forth below, for both payments made directly to Incumbent and payments made on behalf of Incumbent directly to each third party vendor identified on the Cost Estimate ("Vendor").

(i) Within thirty (30) days of completion of Incumbent's Reconfiguration/Upgrade System and prior to the Reconciliation Date (as defined below), Incumbent will submit to Nextel all documentation demonstrating that the actual costs that Incumbent reasonably incurred or paid to other entities as part of the Upgrade System ("Actual Costs") are equal to or exceed the Reconfiguration Cost. The documentation of Actual Costs required by Nextel from Incumbent may include but is not limited to the following: (A) invoices for Actual Costs that are associated with the Upgrade System; (B) receipts substantiating the Actual Costs including receipts for any travel expenses incurred by Incumbent such as hotel

invoices, airfare receipts, etc.; (C) Incumbent's individual employee work orders, time sheets or associated general ledger records specifying the name of the person or employee performing work for Incumbent, the date work was performed, the hours worked and a description of the activity performed; (D) inventory lists and certified statements of the numbers of tasks completed for reconfiguration; and/or (E) the applicable Exhibit B internal labor certifications. Incumbent will only be required to show documentation of Actual Costs for the Upgrade System up to the amount identified on Schedule C. Upon receipt by Nextel of the documentation for Actual Costs of the Upgrade System and subject to Section 20(b), Nextel and Incumbent will reconcile the Actual Costs against the payments made by Nextel to Incumbent and Vendor(s) and the Parties will agree upon the amount of any additional payments due to Incumbent or any refunds due to Nextel. The effective date of agreement on reconciliation of Actual Costs, and Replaced Equipment (as defined in Section 20) and receipt by Nextel of the Reconciliation Statement signed by Incumbent and Incumbent's counsel is the "Reconciliation Date." Should the Parties be unable to agree upon the amount of the additional payments, the Parties shall follow the dispute resolution procedures detailed in the FCC Order.

(ii) Any additional payments due to Incumbent from Nextel will be disbursed to Incumbent within thirty (30) days of the Reconciliation Date, provided the additional payments do not result from Actual Costs that exceed the Cost Estimate. Any refunds due from the Incumbent to Nextel will be made within thirty (30) days of the Reconciliation Date.

(iii) Prior to the Closing Date, Nextel will pay on behalf of itself and Incumbent, both Parties' applicable sales and transfer taxes, if any, and all FCC fees in connection with the preparation and filing of the necessary FCC applications for the assignment(s) described in Section 2 of this Agreement.

4. **Reconfiguration Equipment.** If needed in order to facilitate the Incumbent's transition to the Replacement Frequencies, Nextel will loan any equipment identified in Schedule D as "Loaned Reconfiguration Equipment" and will provide any equipment identified in Schedule D as "Replacement Equipment". Nextel will deliver any Loaned Reconfiguration Equipment to Incumbent in accordance with Schedule D. Incumbent will fax to Nextel a bill of lading associated with each shipment of Loaned Reconfiguration Equipment and Replacement Equipment signed by an authorized representative of Incumbent acknowledging receipt of the Loaned Reconfiguration Equipment and Replacement Equipment in good working order, after a reasonable period of time for Incumbent to inspect the Loaned Reconfiguration Equipment and/or Replacement Equipment. Any Loaned Reconfiguration Equipment will be returned to Nextel by Incumbent prior to the Reconciliation Date.

5. **Retuning Cooperation:**

(a) The Parties acknowledge that the number of frequencies and locations covered by this Agreement will require the Parties to cooperate closely in performing their respective reconfiguration activities. The Parties agree that: (i) as of the Effective Date, the Incumbent may begin the reconfiguration of its subscriber units, in accordance with the appropriate sections of Schedule C and Schedule D, (ii) Incumbent may commence such other activities associated with the reconfiguration of its system as further detailed on Schedule C as of the Effective Date; and (iii) the Parties will agree on a schedule to make the FCC filings, clear the Replacement Frequencies and decommission the Incumbent Frequencies (the "Schedule"). Depending on the timing of the adoption of this Schedule, it may require an Amendment to this Agreement, but in any event the Parties agree to adopt the Schedule no later than: (a) sixty (60) days from the Effective Date of this Agreement, or (b) pursuant to a Schedule agreed upon at a

TA scheduled "Implementation Planning Session" that includes the Incumbent's system, provided the Implementation Planning Session has been scheduled by the TA prior to the expiration of 60 days from the Effective Date of this Agreement (provided, however, in the event the Implementation Planning Session is not scheduled within the expiration of 60 days from the Effective Date of this Agreement, this subsection (b) will be preserved and the Parties will negotiate an Amendment to this Agreement), or (c) such other date as the FCC may require (the "Scheduling Period"). Notwithstanding the aforementioned, in the event the completion date in the Schedule for the reconfiguration of Incumbent's system extends beyond the completion date for such tasks in Incumbent's proposed implementation timetable (as submitted by Incumbent to the FCC in accordance with the Order), the completion date(s) in the Schedule may be subject to FCC approval. If by the end of the Scheduling Period, no agreement on the Schedule has been reached by the Parties, the Parties will jointly seek resolution in accordance with the dispute resolution provisions of the Order, including dispute resolution procedures adopted by the Transition Administrator; as they may be amended from time to time. Nothing in this Section shall prohibit the Incumbent from beginning work immediately on replacement of the subscriber units and/or subscriber software programming.

(b) Notwithstanding any provisions of the Agreement to the contrary, Incumbent expressly agrees to use reasonable efforts (absent any extraordinary or unforeseen events that would result in a delay and require a change notice if the Incumbent had rebanded its existing system in the normal course) during Incumbent's implementation of its Upgrade System, to provide written notice to Nextel that: 1) all non-NPSPAC channels have been cleared upon ninety (90) days written notice from Nextel, however, Incumbent shall not be required to clear the non-NPSPAC channels prior to twelve (12) months after the Effective Date; and 2) all of the Incumbent Frequencies have been cleared within twenty-eight (28) months of the Effective Date. Nextel and Incumbent agree to cooperate with one another to effectuate the foregoing. Incumbent agrees to promptly notify Nextel in writing of any issues regarding performance of the release of any frequencies contemplated herein. The Parties further agree that in the event the new NPSPAC Replacement Frequencies have not been cleared by Mexican licensees which prevents Incumbent from cutting over to the new NPSPAC Replacement Frequencies, then the dates established above for Incumbent to clear its NPSPAC channels shall be extended by the additional length of time required for Mexican licensees to clear the new NPSPAC Replacement Frequencies.

6. **Representations and Warranties:** Each Party represents and warrants to the other as follows:

(i) it is duly organized, validly existing and in good standing under the laws of the state of its incorporation;

(ii) this Agreement has been duly authorized and approved by all required organizational action of the Party;

(iii) neither the execution and delivery of this Agreement nor the consummation of the transactions contemplated by this Agreement will conflict with, or result in any material violation or default under, any term of its articles of incorporation, by-laws or other organizational documents or any agreement, mortgage, indenture, license, permit, lease, encumbrance or other instrument, judgment, decree, order, law or regulation by which it is bound;

(iv) it is the lawful and exclusive FCC licensee of its respective license(s) described in this Agreement, such licenses are valid and in good standing with the FCC, and it has the authority to request the FCC to assign, modify or cancel such licenses;

(v) to the best of its knowledge, there is no pending or threatened action or claim that would have the possible effect of enjoining or preventing the consummation of this Agreement or awarding a third party damages on account of this Agreement; and

(vi) to the best of its knowledge, all information provided to the other Party concerning the transactions contemplated by this Agreement is true and complete.

All representations and warranties made in this Agreement shall survive the Closing Date (defined below) for two (2) years.

7. **Covenants:** From the Effective Date until the Closing Date (defined below), each Party will promptly notify the other Party upon becoming aware of any pending or threatened action by the FCC or any other governmental entity or third party to suspend, revoke, terminate or challenge any license described in this Agreement or to investigate the construction, operation or loading of any system authorized under such licenses. From the Effective Date until the Closing Date, Incumbent will not enter into any agreement resulting in, or otherwise cause, the encumbrance of any license for the Incumbent Frequencies, and Nextel will not enter into any agreement resulting in, or otherwise cause, the encumbrance of any of the Replacement Frequencies.

8. **Changes:**

- a. Incumbent hereby expressly agrees that the Cost Estimate sets forth a not-to-exceed amount that Nextel will pay to or on behalf of Incumbent and any additional costs needed to achieve the Upgrade System are the sole responsibility of Incumbent. In accordance therewith, Incumbent shall neither submit to Nextel a Change Notice (as defined hereinafter) for a proposed increase in the Cost Estimate nor seek reimbursement from Nextel of any proposed cost increases, if any, resulting from the Upgrade System. Further, Incumbent will submit a Change Notice to the other Parties if and only if the limited circumstances identified in Section 8(b) or Section 8(c) arise but in no event will such a Change Notice contain a proposed increase in the Cost Estimate.
- b. The Parties acknowledge that as Incumbent's Upgrade System proceeds in accordance with this Agreement, a possibility exists for the discovery of additional subscriber units by Incumbent. If Incumbent believes that a change to the Replacement Equipment and/or the Replaced Equipment as shown on Schedule D is necessary solely due to the discovery (during the Upgrade System) of additional subscriber units that would have been subject to replacement, Incumbent will promptly notify the other Parties in writing. Such written notice (the "Change Notice") shall set forth (i) a description of the scope of the change believed to be necessary and (ii) an estimate of the time required to configure Incumbent's existing facilities to operate on the Replacement Frequencies. The Parties agree that their review of any such needed changes must be performed expeditiously to keep the work on schedule and that they will provide sufficient staff to manage changes. A Party receiving a Change Notice shall immediately perform its own analysis of the need for and scope of the change and its impact on the Agreement and schedule and negotiate the change in good faith with the

other Parties. After all Parties have agreed upon a change to this Agreement, they shall prepare a proposed written amendment to this Agreement pursuant to Section 25 (Amendments), and submit to the Transition Administrator a copy of the proposed amendment together with a written request for its approval. Such request shall be accompanied by reasonable documentation supporting the need for and scope of the change and in the time required to reconfigure incumbent's existing facilities to operate on the Replacement Frequencies.

- c. If any Party believes that a change to this Agreement is required due to a factual error in this Agreement (such as, a modification to Section 23, Notices, or Schedules A or B) that does not affect the Cost Estimate of this Agreement, such Party will promptly submit a Change Notice to the other Parties.
- d. Incumbent is responsible for all changes necessary as it relates to work performed by a Vendor on behalf of Incumbent. No change to this Agreement or the time required to reconfigure Incumbent's existing facilities to operate on the Replacement Frequencies shall become effective until the Parties have signed an amendment incorporating such approved change into this Agreement pursuant to Section 25 and the Transition Administrator has approved the amendment in writing.

9. **Closing:** The closing ("Closing") of the transactions contemplated by this Agreement will take place within thirty (30) days after (i) FCC approval of the assignment of the Incumbent Frequencies to Nextel and/or deletion of the Incumbent Frequencies from the Incumbent Licenses, (ii) FCC approval of the modification to add the Replacement Frequencies to the Incumbent Licenses with no material conditions or the creation of a new license for Incumbent with no material conditions that includes the Replacement Frequencies, (iii) notification by Incumbent to Nextel that the Incumbent Licenses have been cleared of all Incumbent users pursuant to Section 5 of this Agreement, (iv) delivery by Incumbent of documentation required by Section 3 to substantiate the Actual Costs for the Upgrade System and signing by Incumbent and Incumbent's counsel and delivery to Nextel of the Reconciliation Statement and other documents required to complete the Reconciliation similar to those identified on Exhibit B, if Incumbent submits internal costs as part of its reimbursement documentation, (v) FCC approval of the modification and/or cancellation of the FCC licenses Nextel holds for the operation of 800 MHz frequencies that are co-channels of the Replacement Frequencies, to the extent required to meet the technical short-spacing requirements of Section 90.621(b) of the FCC's Rules, 47 C.F.R. § 90.621(b), as such rule may be amended from time to time by the FCC, (vi) the refund to Nextel or payment to Incumbent as described in Section 3(b)(ii), (if applicable) and (vii) the satisfaction of all other conditions specified in this Agreement (the "Closing Date").

10. **Closing Conditions:** Performance of each Party's Closing obligations is subject to satisfaction of the following conditions (except to the extent expressly waived in writing by the other Party):

(a) the continued truth and accuracy of the other Party's representations and warranties set forth in this Agreement;

(b) all of the covenants of the other Party described in this Agreement are performed in all material respects; and

(c) execution and delivery by the other Party of Closing documents as well as any other Closing instruments and documents either Party or its counsel may reasonably request. Incumbent will execute and deliver to Nextel a closing certification required by the Transition Administrator.

(d) The Parties will cooperate in good faith and exercise their reasonable best efforts to finalize and execute these instruments and documents on or prior to the Closing Date in order to effect the Reconfiguration contemplated.

11. **Review Rights:** Incumbent agrees to maintain records and other supporting evidence related to the costs that Incumbent has expended in connection with the Upgrade System contemplated by this Agreement and that Nextel has paid or will pay to Incumbent pursuant to this Agreement. Incumbent agrees to maintain such records and make them reasonably available to the Transition Administrator for review or reproduction until eighteen (18) months after the date of Incumbent's executed Completion Certification required by this Agreement or for a longer period if Incumbent, for its own purposes, retains such records for a longer period of time. As used in this provision, "records" includes books, documents, accounting procedures and practices and other data regardless of type and regardless of whether such items are in written form, in the form of computer data or in any other form. Nextel shall be responsible for post-Closing audit expenses of the Incumbent, except those expenses resulting from fraudulent activity on behalf of the Incumbent. To the extent that any post-Closing audit determines that Nextel paid a third-party vendor more than provided for under the FCC Order, Nextel's sole remedy is to seek reimbursement directly from the third-party vendor, unless such overpayment was the result of fraud or negligence of the Incumbent.

12. **Excluded Assets; No Assumption of Liabilities:** Nothing in this Agreement should be construed as a transfer or assignment from either Party to the other Party of any assets (including FCC licenses) except as expressly set forth in this Agreement. Other than as expressly provided in this Agreement, neither Party is obligated to assign and transfer to the other Party any asset, tangible or intangible, nor is either Party entitled to assume any asset, tangible or intangible. Neither Party is assuming, nor is either Party responsible for, any liabilities or obligations of the other Party arising out of or in connection with the other Party's licenses (or related systems and facilities) that are the subject of this Agreement.

13. **Confidentiality:** Except as otherwise provided under the California Constitution and the California Public Records Act, the terms of this Agreement and any proprietary, non-public information regarding the Incumbent Frequencies, Replacement Frequencies, Nextel's business and Incumbent's business must be kept confidential by the Parties and their employees, shareholders, agents, attorneys and accountants (collectively, "Agents"), which confidentiality will survive the Closing or termination of this Agreement for a period of two (2) years. The Parties may make disclosures: (i) as required by law, (ii) to the Transition Administrator, (iii) to their Agents, (iv) to a manufacturer of Replacement Equipment to allow for the provisioning of that equipment to Incumbent (but only to the extent such disclosure specifically relates to that manufacturer's equipment as identified on Schedule D), and (v) to a Vendor (but only to the extent that such disclosure specifically relates to that Vendor's work and costs under this Agreement (as identified on Schedule C) as required to perform obligations under this Agreement. Nextel, Incumbent and their respective Agents may make disclosures regarding the terms of this Agreement to other public safety licensees and their Agents in accordance with the FCC Order, WT Docket No. 02-55, adopted January 8, 2007. Each Party will cause all of its Agents to honor the provisions of this Section.

14. **Cooperation:** The Parties will cooperate with each other and the Transition Administrator with respect to the Reconfiguration work contemplated by this Agreement.

Without limiting the foregoing obligations, the Parties agree to cooperate in the preparation of any applications required to be filed with the FCC, and Incumbent agrees to provide reasonable access to its facilities so that the Transition Administrator may comply with any audit obligations and so any Reconfiguration work contemplated by this Agreement may be performed in accordance with the Cost Estimate and performance schedule. If a Party is subject to a denial of FCC benefits for delinquent non-tax debts owed to the FCC that would prevent or delay the timely processing of any FCC applications, such Party shall cure such delinquency in an expeditious manner and at its sole expense.

15. **Intentionally Deleted.**

16. **Disputes:** The Parties agree that any dispute related to the Replacement Frequencies, Nextel's obligation to pay any cost of the Reconfiguration of Incumbent's system contemplated by this Agreement, or the comparability of Incumbent's reconfigured system to Incumbent's existing system prior to Reconfiguration, which is not resolved by mutual agreement, shall be resolved in accordance with the dispute resolution provisions of the Order, including the dispute resolution procedures adopted by the Transition Administrator, as they may be amended from time to time.

17. **No Gratuities:** No gift, gratuity, credit, thing of value or compensation of any kind shall be offered or provided by Incumbent or Nextel, directly or indirectly, to any officer, employee or official of either Party for the purpose of improperly obtaining or rewarding favorable treatment under this Agreement.

18. **Liens:** If any liens or security interests ("Liens") attach to any of Incumbent's facilities in favor of any Vendor or service provider that is performing any Reconfiguration work contemplated by this Agreement as a result of Nextel's breach of any obligation to make direct payment (not in dispute) to such Vendor or services provider, Nextel upon receipt of Notice from Incumbent will cooperate to remove any Liens.

19. **Vendor Performance Issues:** Incumbent will select and contract directly with any Vendor or service provider performing work required to reconfigure the Incumbent's existing facilities to operate on the Replacement Frequencies. Neither the Transition Administrator nor Nextel will be responsible for, or assume the risk of any failure of that Vendor to perform its obligations under any contract entered into between Incumbent and such Vendor in connection with the Reconfiguration contemplated by this Agreement. Incumbent shall require all Vendors to accomplish the Upgrade System in a timely manner.

20. **Replaced and Replacement Equipment:**

(a) If the reconfiguration of the Incumbent's existing facilities to operate on the Replacement Frequencies involves the replacement of any of Incumbent's existing equipment ("Replaced Equipment") with equipment provided by Nextel (as identified on Schedule D) or equipment the cost of which is being paid by Nextel pursuant to this Agreement as listed in Schedule C (collectively the "Replacement Equipment"), then (i) title to Replaced Equipment listed in Schedule D shall pass to Nextel at Closing free and clear of liens and any other encumbrances, and Incumbent shall execute such documentation as Nextel may reasonably request to transfer title to Nextel, (ii) title to Replacement Equipment provided by Nextel will pass to Incumbent at Closing and Nextel shall execute such documentation as Incumbent may reasonably request to transfer title to Incumbent free and clear of liens and any other encumbrances, and (iii) Incumbent shall deliver the Replaced Equipment to Nextel at Nextel's cost, pursuant to Nextel's shipment instructions, and prior to the Reconciliation Date.

(b) If Incumbent fails to return any item of the Replaced Equipment in working condition to Nextel, Incumbent must return to Nextel those items of the Replacement Equipment that would have replaced the Replaced Equipment not returned, in the same condition it was received (i.e. new for new or used for used), prior to the Reconciliation Date. If Incumbent fails to return any item of the Replaced Equipment in working condition to Nextel under this Section 20(b) and a Product Typical Value is set forth in Schedule E for the item of Replacement Equipment then either: (i) Nextel will deduct the Product Typical Value (as set forth in Schedule E) for those items of Replacement Equipment provided to replace the Replaced Equipment not returned to Nextel (including tax (if any) and shipping) (the "Nextel Equipment Refund") from the final payment due to Incumbent after the Reconciliation; (ii) Incumbent must pay Nextel the Nextel Equipment Refund for those items of Replacement Equipment not returned to Nextel in accordance with Section 3(b)(ii) (if no final payment is due to Incumbent); or (iii) Nextel will deduct the portion of the Nextel Equipment Refund up to the value of the final payment due to Incumbent and Incumbent must pay Nextel the remaining Nextel Equipment Refund not covered by the final payment in accordance with Section 3(b)(ii) (if the final payment due Incumbent is less than the Nextel Equipment Refund), or (iv) Incumbent may choose to purchase Comparable Equipment, defined below, from any source and send the equipment, along with adequate documentation, to Nextel prior to the Reconciliation Date. Comparable Equipment shall mean equipment of the same condition (e.g. new for new or used for used) and from the same manufacturer, that is the identical model and includes the same options and accessories as the Replacement Equipment provided by Nextel.

(c) In the event of a dispute between the Parties concerning a discrepancy of the number of units of Nextel Replaced Equipment returned to Nextel, or to the condition of the Nextel Replaced Equipment returned to Nextel, the Parties acknowledge and agree that, absent material evidence to the contrary as reasonably determined by Nextel, receipt by Nextel of an affidavit (signed by the person or persons authorized by Incumbent to pack the Nextel Replaced Equipment for return to Nextel) will be considered conclusive evidence of the return of the stated count and condition of the Nextel Replaced Equipment by Incumbent, provided, however that such affidavit: (1) indicates that the Nextel Replaced Equipment was packed in working condition by such authorized person by Incumbent, and (2) documents the model, options and accessories, serial numbers, and quantity of Nextel Replaced Equipment packed and shipped to Nextel. Nothing in this Section shall restrict or prevent either Party from resolving any disputes related to this Section in accordance with the terms of this Agreement.

21. **Termination**: This Agreement may be terminated and the transactions contemplated by this Agreement abandoned: (i) by mutual consent of the Parties provided in writing; (ii) for cause by either Party upon material breach of the other Party, following a thirty (30) day period for cure by the breaching Party following written notice of the breach; or (iii) by Nextel prior to Closing in the event of any Adverse Decision affecting the Order by any governmental entity of competent jurisdiction. For purposes of this Agreement, an "Adverse Decision affecting the Order" means an order, decree, opinion, report or any other form of decision by a governmental entity of competent jurisdiction that results, in whole or part, in a stay, remand, or reversal of the Order. In the event of termination, the Parties shall take all necessary action (including preparing and filing FCC documents) to return the *status quo ante* on the date of this Agreement. In the event of termination, Nextel shall pay all costs associated with the return to the *status quo ante*, as well as all Incumbent costs expended in the Agreement negotiations and implementation, except if such termination was due to an uncured material breach by Incumbent.

22. Intentionally Deleted

23. **Notices:** All notices and other communications under this Agreement must be in writing and will be deemed given (i) the same day if delivered personally or sent by facsimile; (ii) the next business day if sent by overnight delivery via a reliable express delivery service; or (iii) after five (5) business days if sent by certified mail, return receipt requested, postage prepaid. All notices are to be delivered to the Parties at the following addresses:

<p>If to Incumbent, to: Los Angeles, County of Information Technology Service Telecommunications Branch Radio Systems Division 1110 N. Eastern Avenue Los Angeles, CA 90063 Attn: Ian Telfer, P.E. Phone: (323) 267-3822 Fax: (323) 262-4607 Email: Itelfer@isd.lacounty.gov</p>	<p>If to Nextel, to: Nextel West Corp. c/o Sprint Nextel Corp. 12502 Sunrise Valley Drive 2nd floor, OPS II Bldg Reston, VA 20196 Attn: Heather P. Brown, Esq. Phone: (703) 433-4467 Fax: (703) 433-4483</p>
<p>With a copy that shall not constitute Notice:</p> <p>Office of the County Counsel 500 W. Temple Street, Rm 653 Los Angeles, CA 90012 Attn: Patrice Salseda, Senior Deputy</p> <p>Alan S. Tilles, Esquire Shulman Rogers Gandal Pordy & Ecker, P.A. 12505 Park Potomac Avenue, Sixth Floor Potomac, MD 20854 Phone: (301) 231-0930 Fax: (301) 230-2891</p>	<p>With a copy that shall not constitute Notice:</p> <p>Nextel Communications, Inc. 6575 The Corners Parkway Norcross, GA 30092 Attn: William Jenkins, VP Spectrum Resources Phone: (678) 823-6000 Fax: (678) 405-8252</p>

24. **Assignment:** This Agreement is binding upon and inures to the benefit of the Parties and their respective successors and permitted assigns. Either Party may assign this Agreement to any direct or indirect subsidiary or affiliate of the Party, upon delivery of written notice to the other Party; provided, however, that any direct or indirect subsidiary or affiliate of Nextel that assumes this Agreement, shall assume all of Nextel's obligations under this Agreement and shall be liable with respect to Nextel's obligations under this Agreement pursuant to the Order. Notwithstanding the foregoing, the obligation of Sprint Nextel Corp. to perform under the Order shall not be affected by any such assignment.

25. **Amendments:** This Agreement, including without limitation the scope of work contemplated hereby and the Estimated Cost thereof to be paid by Nextel, may be amended or modified only by a written instrument signed by authorized representatives of both Parties, provided, however, no amendment or modification to this Agreement shall become effective until approved by the Transition Administrator, or the FCC after an adverse decision by the Transition Administrator.

26. **Benefits:** This Agreement is for the benefit of the Parties and their successors and permitted assigns, and nothing in this Agreement gives or should be construed to give any legal

or equitable rights under this Agreement to any person or entity, other than (i) the successors and assigns of the Parties, and (ii) the Transition Administrator as specifically provided in this Agreement.

27. **Miscellaneous:** If any provision(s) of this Agreement is held in whole or part, to be invalid, void or unlawful by any administrative agency or court of competent jurisdiction, then such provision(s) will be deemed severable from the remainder of this Agreement, will in no way affect, impair or invalidate any other provision contained in the Agreement and the Parties will use their commercially reasonable efforts to amend this Agreement to make the unlawful provision compliant with applicable law so as to preserve the rights and obligations of the Parties. No action taken pursuant to this Agreement should be deemed to constitute a waiver of compliance with any representation, warranty, covenant or agreement contained in this Agreement and will not operate or be construed as a waiver of any subsequent breach, whether of a similar or dissimilar nature. This Agreement, together with the Schedules, constitutes the entire understanding and agreement between the Parties concerning the subject matter of this Agreement, and supersedes all prior oral or written agreements or understandings. This Agreement is governed by the laws of the State of California without regard to conflicts of law principles thereof. This Agreement may be executed in one or more counterparts, including by facsimile, which will be effective as original agreements of the Parties executing the counterpart. In consideration of the mutual consideration set forth herein, this Agreement is effective as a legally binding agreement between the Parties upon execution by the Parties.

28. **Additional Provisions:** Incumbent contemplates it will be able to license a modified simulcast frequency plan, using currently licensed spectrum and existing contours, in order to implement its Upgrade System. Incumbent acknowledges it is solely responsible for obtaining proper FCC licensing for the Upgrade System and that such licensing will not cause additional delays in clearing the Incumbent Frequencies and no Change Orders for additional expenses, related to obtaining proper FCC licensing for the Upgrade System, will be submitted to Nextel.

29. **Condition Precedent.** The Parties acknowledge that pursuant to Incumbent's execution protocol and legislative approval process, Nextel is executing this Agreement prior to formal approval by the Transition Administrator. The Parties acknowledge and agree that approval of the Transition Administrator is a condition precedent to the enforceability of this Agreement. This Agreement shall not be binding on either Party until approval of same by the Transition Administrator.

SIGNATURES ON FOLLOWING PAGE

In consideration of the mutual consideration set forth herein, this Agreement is effective as a legally binding agreement between the Parties upon execution by the Parties.

INCUMBENT:
Los Angeles, County of

NEXTEL:
Nextel West Corp.

By:_____

By:_____

Name:

Name:

Title:

Title:

In consideration of the mutual consideration set forth herein, this Agreement is effective as a legally binding agreement between the Parties upon execution by the Parties.

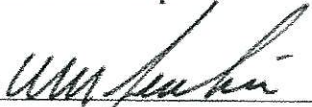
INCUMBENT:
Los Angeles, County of

By: _____

Name:

Title:

NEXTEL:
Nextel West Corp.

By:  _____

Name: WILLIAM M JENKINS
Title: AUTHORIZED SIGNATORY

In consideration of the mutual consideration set forth herein, this Agreement is effective as a legally binding agreement between the Parties upon execution by the Parties.

INCUMBENT:
Los Angeles, County of

NEXTEL:
Nextel West Corp.

By: _____

By: _____

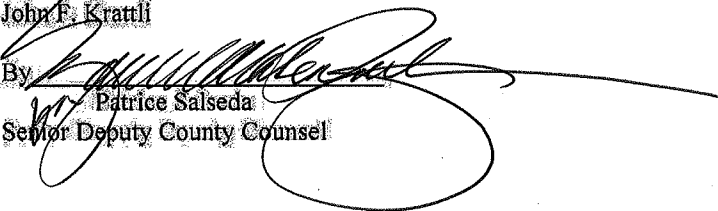
Name:

Name:

Title:

Title:

APPROVED AS TO FORM:
COUNTY COUNSEL
John F. Krattli

By: 
Patrice Salseda
Senior Deputy County Counsel

SCHEDULE A*

Incumbent Frequencies

Incumbent Name: Los Angeles, County of

The Incumbent Frequencies listed on this Schedule A, represent the transmit (base station) frequencies on the Incumbent Licenses. Although not specifically listed, all related mobile frequencies and/or station classes listed on the Incumbent Licenses are herein incorporated by reference.

Incumbent Assigns to Nextel:

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
KFO689	852.3125	Los Angeles, County of	CASTAIC, CA	34-31-7	118-35-39.3	11/19/13
KNER448	852.3125	Los Angeles, County of	WHITTIER, CA	34-1-2	118-0-52.2	3/19/22
WPDV629	852.3125	Los Angeles, County of	LONG BEACH, CA	33-46-59.1	118-11-48.2	11/29/13
WPDV632	852.3125	Los Angeles, County of	LOS ANGELES, CA	34-3-48	118-21-29.3	11/29/13
WPDV635	852.3125	Los Angeles, County of	LOS ANGELES, CA	34-3-46	118-12-13.3	11/29/13
WPDV636	852.3125	Los Angeles, County of	97 km radius	34-16-7	118-14-11.3	11/29/13
WPDV639	852.3125	Los Angeles, County of	LOS ANGELES, CA	34-1-28	118-16-26.3	11/29/13
WPRR761	852.3125	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-44-34.1	118-23-36.3	1/2/16
WZS448	852.3125	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	1/10/14
WNNM901	866.0875	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.25	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.275	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.3	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.5875	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.775	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.8	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	866.9375	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.225	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.25	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM901	867.275	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.725	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.775	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	867.8	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.0875	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.25	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.275	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.725	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.775	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM901	868.8	Los Angeles, County of	GORMAN, CA	34-44-39.9	118-43-41.3	3/20/15
WNNM902	866.0625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.0875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.225	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.25	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.275	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.3	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.4375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.5875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.725	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.75	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.775	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.8	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.9375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	866.9625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.0625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.0875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM902	867.225	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.25	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.275	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.3	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.4375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.5875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.725	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.75	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.775	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.8	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.9375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	867.9625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.0625	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.0875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.225	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.25	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.275	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.3	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.4375	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.5875	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.725	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.75	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.775	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM902	868.8	Los Angeles, County of	AGOURA, CA	34-5-9	118-47-9.3	3/20/15
WNNM904	866.0875	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.25	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM904	866.275	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.3	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.5875	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.775	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.8	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	866.9375	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.225	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.25	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.275	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.725	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.775	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	867.8	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.0875	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.25	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.275	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.725	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.775	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM904	868.8	Los Angeles, County of	CASTAIC, CA	34-34-10	118-44-25.3	3/20/15
WNNM905	866.0625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.0875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.225	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.25	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.275	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.3	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.4375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.5875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM905	866.725	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.75	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.775	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.8	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.9375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	866.9625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.0625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.0875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.225	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.25	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.275	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.3	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.4375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.5875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.725	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.75	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.775	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.8	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.9375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	867.9625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.0625	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.0875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.225	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.25	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.275	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.3	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM905	868.4375	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.5875	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.725	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.75	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.775	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM905	868.8	Los Angeles, County of	RANCHO PALOS VERDES, CA	33-46-7.1	118-22-35.3	3/20/15
WNNM906	866.0875	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.25	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.275	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.3	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.5875	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.775	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.8	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	866.9375	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.225	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.25	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.275	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.725	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.775	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	867.8	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.0875	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.25	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.275	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.725	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.775	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15
WNNM906	868.8	Los Angeles, County of	WRIGHTWOOD, CA	34-22-28	117-42-22.2	4/30/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM908	866.0625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.0875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.225	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.25	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.275	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.3	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.4375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.5875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.725	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.75	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.775	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.8	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.9375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	866.9625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.0625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.0875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.225	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.25	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.275	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.3	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.4375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.5875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.725	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.75	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.775	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.8	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM908	867.9375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	867.9625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.0625	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.0875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.225	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.25	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.275	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.3	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.4375	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.5875	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.725	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.75	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.775	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM908	868.8	Los Angeles, County of	75 km radius	34-14-48	118-6-17.3	8/18/14
WNNM909	866.0625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.0875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.225	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.25	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.275	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.3	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.4375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.5875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.725	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.75	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.775	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.8	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM909	866.9375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	866.9625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.0625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.0875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.225	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.25	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.275	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.3	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.4375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.5875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.725	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.75	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.775	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.8	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.9375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	867.9625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.0625	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.0875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.225	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.25	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.275	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.3	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.4375	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.5875	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.725	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.75	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM909	868.775	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM909	868.8	Los Angeles, County of	GLENDALE, CA	34-13-3	118-16-59.3	3/29/15
WNNM912	866.0625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.0875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.225	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.25	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.275	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.3	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.4375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.5875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.725	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.75	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.775	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.8	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.9375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	866.9625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.0625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.0875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.225	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.25	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.275	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.3	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.4375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.5875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.725	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.75	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM912	867.775	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.8	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.9375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	867.9625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.0625	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.0875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.225	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.25	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.275	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.3	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.4375	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.5875	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.725	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.75	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.775	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNNM912	868.8	Los Angeles, County of	SAN DIMAS, CA	34-9-37	117-47-56.2	4/30/15
WNZY866	866.0875	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.25	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.275	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.3	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.5875	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.775	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.8	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	866.9375	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.225	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.25	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNZY866	867.275	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.725	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.775	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	867.8	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.0875	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.25	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.275	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.725	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.775	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY866	868.8	Los Angeles, County of	PALMDALE, CA	34-33-58	118-16-31.3	7/29/22
WNZY867	866.0625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.0875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.225	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.25	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.275	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.3	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.4375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.5875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.725	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.75	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.775	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.8	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.9375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	866.9625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.0625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.0875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNZY867	867.225	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.25	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.275	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.3	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.4375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.5875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.725	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.75	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.775	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.8	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.9375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	867.9625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.0625	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.0875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.225	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.25	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.275	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.3	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.4375	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.5875	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.725	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.75	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.775	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WNZY867	868.8	Los Angeles, County of	ALTADENA, CA	34-14-48	118-6-17.3	7/29/22
WPHY854	866.0625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.0875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WPHY854	866.225	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.25	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.275	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.3	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.4375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.5875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.725	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.75	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.775	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.8	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.9375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	866.9625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.0625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.0875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.225	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.25	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.275	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.3	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.4375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.5875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.725	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.75	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.775	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.8	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.9375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	867.9625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WPHY854	868.0625	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.0875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.225	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.25	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.275	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.3	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.4375	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.5875	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.725	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.75	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.775	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPHY854	868.8	Los Angeles, County of	75 km radius	34-14-28	118-6-17.3	11/28/15
WPJM560	866.95	Los Angeles, County of	Countywide: Los Angeles			7/29/21
WPJM560	867.075	Los Angeles, County of	Countywide: Los Angeles			7/29/21
WPJM560	867.95	Los Angeles, County of	Countywide: Los Angeles			7/29/21
WPJM560	868.075	Los Angeles, County of	Countywide: Los Angeles			7/29/21
WPPX548	866.225	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPPX548	866.725	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPPX548	867.3	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPPX548	868.225	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPPX548	868.75	Los Angeles, County of	SAN DIMAS, CA	34-4-18	117-48-49.2	2/28/15
WPTQ630	868.6125	Los Angeles, County of	LANCASTER, CA	34-42-6	117-49-24	11/26/21
WPTQ630	868.8375	Los Angeles, County of	LANCASTER, CA	34-42-6	117-49-24	11/26/21
WPTQ630	868.9125	Los Angeles, County of	LANCASTER, CA	34-42-6	117-49-24	11/26/21
WPUK518	866.9625	Los Angeles, County of	AVALON, CA	33-23-12.1	118-24-3.2	3/21/22
WPUK518	867.0625	Los Angeles, County of	AVALON, CA	33-23-12.1	118-24-3.2	3/21/22

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WPUK518	867.9625	Los Angeles, County of	AVALON, CA	33-23-12.1	118-24-3.2	3/21/22
WPUK518	868.0625	Los Angeles, County of	AVALON, CA	33-23-12.1	118-24-3.2	3/21/22
WQFY427	868.75	Los Angeles, County of	PALMDALE, CA	34-13-3	118-16-56	11/6/16
WQFY428	867.3	Los Angeles, County of	GORMAN, CA	34-48-13	118-48-53	11/6/16
WQGS660	866.2125	Los Angeles, County of	CHATSWORTH, CA	34-19-12	118-33-56	5/25/13
WQGS660	866.7125	Los Angeles, County of	CHATSWORTH, CA	34-19-12	118-33-56	5/25/13
WQGS660	867.3125	Los Angeles, County of	CHATSWORTH, CA	34-19-12	118-33-56	5/25/13
WQGS660	868.2125	Los Angeles, County of	CHATSWORTH, CA	34-19-12	118-33-56	5/25/13
WNNM907	821.0625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.0875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.225	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.25	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.275	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.3	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.4375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.5875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.725	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.75	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.775	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.8	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.9375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	821.9625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.0625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.0875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.225	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.25	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15

Call Sign	Frequency	Licensee	Location	Latitude (N)	Longitude (W)	Expire Date
WNNM907	822.275	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.3	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.4375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.5875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.725	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.75	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.775	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.8	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.9375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	822.9625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.0625	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.0875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.225	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.25	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.275	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.3	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.4375	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.5875	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.725	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.75	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.775	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15
WNNM907	823.8	Los Angeles, County of	32 km radius	34-3-20	118-14-39.3	3/20/15

*In addition to the Incumbent Frequencies listed on Schedule A the Incumbent operates multiple interoperability channels that are licensed to the State of California, which will be retuned along with the Schedule A Incumbent Frequencies. However, the interoperability channels licensed to the State of California will be in the Schedule A of the forthcoming State of California Frequency Reconfiguration Agreement.

** Additional call signs shall be added by amendment as necessary.

SCHEDULE B

Replacement Frequencies

Incumbent Name: Los Angeles, County of

The related mobile frequencies and/or station classes for the Replacement Frequencies listed in this Schedule B, will be assigned from Nextel to Incumbent based on the Incumbent Licenses listed in Schedule A.

Nextel Assigns to Incumbent:

Reserved

SCHEDULE C

800 MHZ RECONFIGURATION

COST ESTIMATE – CERTIFIED REQUEST

Incumbent's Name: **Los Angeles, County of**

Request for Reconfiguration Funding

Pursuant to the Order, Incumbent is required to reconfigure its existing facilities and requests Nextel to fund the estimated reconfiguration costs included below:

Incumbent Payment Terms: Nextel will pay Incumbent an amount not to exceed the Estimated Cost(s) for Incumbent with respect to each category of work, as set forth below. Nextel will pay Incumbent **One Million, Two Hundred Fifty Thousand Dollars (\$1,250,000.00)** within 30 days after receipt by Nextel of the fully executed Agreement and fully completed Incumbent Information Form (as set forth on Exhibit A). Nextel will make an interim payment to Incumbent in the amount of **One Million, Two Hundred Fifty Thousand Dollars (\$1,250,000.00)** within thirty (30) calendar days after written notification of the clearing of the Incumbent Frequencies. and the return of the Schedule D equipment per Section 20 of the Agreement. Nextel will pay any outstanding balance of the Actual Costs due to Incumbent within 30 days after the Reconciliation Date (as "Actual Costs" and "Reconciliation Date" are defined in Section 3(b)(i)).

Vendor Payment Terms: Nextel will pay Vendor an amount not to exceed the Estimated Cost(s) for that Vendor with respect to each category of work, as set forth below. Nextel will pay each Vendor within 30 days after receipt by Nextel of (A) an invoice from the Vendor and (B) Incumbent's approval of receipt of goods and services and approval of associated costs included on the Vendor invoice.

1. System Description:

Existing EDACS System Description:

For its Countywide Integrated Radio System (CWIRS), the County of Los Angeles currently uses Harris' EDACS system to provide seamless radio coverage to more than 7,700 users. CWIRS' Trunked Simulcast communication is provided by two independent but interconnected Harris 800 MHz EDACS systems, comprising:

- The 20-channel Countywide System, deployed at seven hilltop sites and one downtown LA building (receive only)\
- The 20-channel Basin System, deployed at five (5) hilltop sites and one downtown LA building (receive only),

- 7 multisite zones/systems to provide fill-in coverage

The Basin and Countywide Simulcast systems use Harris Master II Base Station Repeaters and RS-232 simulcast controllers. Harris MASTR III Base Station repeaters and receivers are used for the multisite systems. The Harris Integrated Multisite Controller (IMC) is located at Eastern Ave.

The major system elements to be reconfigured are summarized in the table below:

	Total In System	Total Included in FRA
Base station frequencies	58	57
- Voice channels	49	48
- Home/Control channels	9	9
Repeater sites	15	15
Other sites (remote recv, BDA)	18	18
Subscriber units retuned	0	0
Subscriber units reprogrammed	1494	1494
Subscriber units replaced	6247	6247
Subscriber units rebanded total	7741	7741
Entities operating on the system	33	33

2. Reconfiguration Milestones: Identify the anticipated start date of the overall reconfiguration of your system (Project Start). Then, for each major reconfiguration milestone listed in the table below, provide (1) the anticipated number of days after project start date required to begin execution of the task identified, and (2) the estimated duration in number of days required to complete the task identified. As an FRA is negotiated, it is not always possible to know an actual start date for specific reconfiguration tasks. In such a case, it is acceptable to forecast an estimated start date from execution of the FRA (i.e., "contract execution + xx days") and estimate the duration of each task.

Reconfiguration Task	Start Date	# of Days After Project Start Date for Start of Task	Estimated Duration in # of Days
Project Start	6/3/13		
Reconfiguration Planning		30	48
Reconfigure Subscriber Equipment		456	224
Reconfigure Infrastructure Equipment		350	428
System Acceptance		428	640

3. Implementation Plan: Upgrade - Reconfiguration of the County's EDACS system will be accomplished through the installation of a P25 system utilizing rebanded frequency assignments. Included with the P25 replacement system are:

- Four (4) simulcast zones with MASTR V Base Stations
- Five (5) multisite zones with MASTR V Base Stations
- Maestro^{IP} Consoles

4. Cost Estimate:

Description of Work To Be Performed	Payee (separately identify Incumbent and each Vendor being paid for work performed)	Estimated Cost(s) for Incumbent and Each Vendor (Not to Exceed listed amount)
System Upgrade	(Vendor) Harris	\$17,300,000.00
System Upgrade	(Incumbent) Los Angeles, County of	\$2,500,000.00
Legal Services	(Vendor) Shulman Rogers Gandal Pordy & Ecker, P.A. 12505 Park Potomac Avenue, 6 th Floor Potomac, Maryland 20854 301-231-0930	\$200,000.00
Totals		
Harris	Vendor	\$17,300,000.00
Los Angeles, County of	Incumbent	\$2,500,000.00
Shulman Rogers Gandal Pordy & Ecker, P.A	Vendor	\$200,000.00
Total Estimated Costs		\$20,000,000.00

Certification

Pursuant to the Order, Incumbent hereby certifies to the Transition Administrator appointed pursuant to the Order that the funds requested above are the minimum necessary to provide Incumbent reconfigured facilities comparable to those presently in use in a manner that is reasonable, prudent and timely. Incumbent further certifies, to the best of Incumbent's knowledge, that any vendor costs identified on the Schedule C are comparable to costs previously charged by each such vendor to Incumbent.

Signature:_____

Print Name:_____

Title:_____

Phone Number:_____

E-mail:_____

Date:_____

SCHEDULE D

LOS ANGELES, COUNTY OF, CA PH II

1) Loaned Reconfiguration Equipment (provided by Nextel)

Quantity	Manufacturer	Description	Model Number	New/Used
		Small Cell Swing Equipment		
2		Duplexer, 806-869 MHz	DB-4090	Used
		Mutual Aid Equipment - Oat Mountain		
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	Used
1		Diplexer, Rebanding (dbSpectra) 851-854/866-869 MHz	SPD-581	Used
7		Telex Vega Rebanding Panel	SYS000010000	Used
7		40" CABLE, MASTRIIE-VEGA	NLT-40MASTRIEEE	Used
7		Cable, Back to Back Repeater, 300in	CA-014819-030	Used
7		AUXILIARY BACKPLANE BOARD	19D902978G1	Used
7		RELAY	T154-4C-12VDC	Used
7		MOLEX HOUSING	03-09-1119	Used
16		MOLEX FEMALE CRIMP TERMINAL	02-09-1119	Used
8		MOLEX MALE CRIMP TERMINAL	02-09-2118	Used
2		Type 66 Block, Rack Mounted	19D438890G3	Used
		Mutual Aid Equipment - San Dimas Microwave		
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	Used
1		Diplexer, Rebanding (dbSpectra) 851-854/866-869 MHz	SPD-581	Used
7		Telex Vega Rebanding Panel	SYS000010000	Used
7		40" CABLE, MASTRIIE-VEGA	NLT-40MASTRIEEE	Used
7		Cable, Back to Back Repeater, 300in	CA-014819-030	Used
7		AUXILIARY BACKPLANE BOARD	19D902978G1	Used
7		RELAY	T154-4C-12VDC	Used
7		MOLEX HOUSING	03-09-1119	Used
16		MOLEX FEMALE CRIMP TERMINAL	02-09-1119	Used
8		MOLEX MALE CRIMP TERMINAL	02-09-2118	Used
2		Type 66 Block, Rack Mounted	19D438890G3	Used
		Mutual Aid Reconfiguration - Verdugo Peak		
7		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	Used
1		COMBINER, 6CH, 800MHZ (dbSpectra) - (866.5125 MHz, 867.0125 MHz, 867.5125 MHz, 868.0125 MHz, 868.5125 MHz, 868.9875 MHz)	DSCC85-06N	Used
1		Diplexer, Rebanding (dbSpectra) - (851-854/866-869 MHz)	SPD-581	Used
7		Telex Vega Rebanding Panel	SYS000010000	Used
7		Cable, Back to Back Repeater, 40in	CA-014819-004	Used

7		Cable,Back to Back Repeater,300in	CA-014819-030	Used
2		Rack,Open,96 in	SCMR1E	Used
2		Type 66 Block, Rack Mounted	19D438890G3	Used
7		STATION,CONV MASTR III,806-870MHZ,100W - (866.0125, 866.5125 MHz, 867.0125 MHz, 867.5125 MHz, 868.0125 MHz, 868.5125 MHz, 868.9875 MHz)	SX8MCX	Used
7		PROGRAMMING,NPSPAC	SXNP1A	Used
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	Used
7		COVER,SCREEN,T/R SHELF	SXMN9C	Used
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	Used
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	Used
7		Kit, SOR Relay	SXSU3D	Used
7		Feature, 4 wire audio	SXSF3J	Used
		Mutual Aid Equipment - Rolling Hills Transmit		
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
1		COMBINER,6CH,800MHZ (dbSpectra) - (866.5125 MHz, 867.0125 MHz, 867.5125 MHz, 868.0125 MHz, 868.5125 MHz, 868.9875 MHz)	DSCC85-06N	Used
1		Diplexer, Rebanding (dbSpectra) - (851-854/866-869 MHz)	SPD-581	Used
7		Telex Vega Rebanding Panel	SYS000010000	Used
7		Cable,Back to Back Repeater,40in	CA-014819-004	Used
7		Cable,Back to Back Repeater,300in	CA-014819-030	Used
2		Rack,Open,96 in	SCMR1E	Used
2		Type 66 Block, Rack Mounted	19D438890G3	Used
7		STATION,CONV MASTR III,806-870MHZ,100W - (866.0125, 866.5125 MHz, 867.0125 MHz, 867.5125 MHz, 868.0125 MHz, 868.5125 MHz, 868.9875 MHz)	SX8MCX	Used
7		PROGRAMMING,NPSPAC	SXNP1A	Used
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	Used
7		COVER,SCREEN,T/R SHELF	SXMN9C	Used
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	Used
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	Used
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	Used
7		Kit, SOR Relay	SXSU3D	Used
7		Feature, 4 wire audio	SXSF3J	Used

2) Replacement Equipment (provided by Nextel)

Quantity	Manufacturer	Description	Model Number	New/Used
		Small Cell Reconfiguration		
		OPS, H.Claude Hudson Med. Center		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		OPS, High Desert Hospital		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		OPS, LAC-USC Med Center		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
1		MANUAL,INSTL,MASTR III AUX RECEIVER	MM001SR	New
1		MANUAL,MAINT,MASTR III AUX RECEIVER,800M	MM004SR	New
2		PANEL, SYSTEM, CONVENTIONAL	SRCN3W	New
2		RECEIVER,MASTR III AUX RX,806-825MHZ	SR8N01	New
2		FEATURE,VOTING TONE,1950HZ	SRSF1W	New
2		SHELF,AUX RX	SRRB1N	New
2		PANEL, BLANK	SRMN5Z	New
2		KIT, CABLE, 83/86 IN.CABINET/RACK, SHELF #1	SRCF3Z	New

2		POWER SUPPLY, 120 VAC, 47-63 HZ, 12 VDC	SRPS9V	New
2		OPTION, NO CABINET	SRMN2B	New
		OPS, Long Beach Health Center		
1		STATION, CONV MASTR III, 806-870MHZ, 100W	SX8MCX	New
1		PROGRAMMING, NPSPAC	SXNP1A	New
1		Instruction, Rack-up, Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER, SCREEN, T/R SHELF	SXMN9C	New
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO RELAY, NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		OPS, Rancho Los Amigos		
1		STATION, CONV MASTR III, 806-870MHZ, 100W	SX8MCX	New
1		PROGRAMMING, NPSPAC	SXNP1A	New
1		Instruction, Rack-up, Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER, SCREEN, T/R SHELF	SXMN9C	New
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO RELAY, NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		Museum of Art		
1		STATION, CONV MASTR III, 806-870MHZ, 100W	SX8MCX	New
1		PROGRAMMING, NPSPAC	SXNP1A	New
1		Instruction, Rack-up, Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER, SCREEN, T/R SHELF	SXMN9C	New
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO RELAY, NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		Parks & Recreation		
1		STATION, CONV MASTR III, 806-870MHZ, 100W	SX8MCX	New
1		PROGRAMMING, NPSPAC	SXNP1A	New
1		Instruction, Rack-up, Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER, SCREEN, T/R SHELF	SXMN9C	New
1		Kit, Mounting Hrdwr, 69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO	SXCJ5E	New

		RELAY,NO DUPLEXER		
1		Feature, 4 wire audio	SXSF3J	New
		ISD, Portable Repeater		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		ISD, Mobile Repeater/Tower		
1		STATION,CONV MASTR III,806-870MHZ,100W	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
1		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
		Mutual Aid Reconfiguration		
		Mutual Aid Reconfiguration - Oat Mountain		
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		COMBINER,8CH,800MHZ (dbSpectra) - (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz, 855.0000 MHz (Spare Port))	DSCC85-08N	New
2		Rack,Open,96 in	SCMR1E	New
2		Type 66 Block, Rack Mounted	TBD	New
7		STATION,CONV MASTR III,806-870MHZ,100W (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	SX8MCX	New
7		PROGRAMMING,NPSPAC	SXNP1A	New
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
7		COVER,SCREEN,T/R SHELF	SXMN9C	New
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
7		CABLE,RX ANTENNA,NO	SXCJ5E	New

		RELAY,NO DUPLEXER		
7		Kit, SOR Relay	SXSU3D	New
7		Feature, 4 wire audio	SXSF3J	New
		Mutual Aid Reconfiguration - San Dimas Microwave		
1		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		COMBINER,8CH,800MHZ (dbSpectra) - (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz, 855.0000 MHz (Spare Port))	DSCC85-08N	New
7		STATION,CONV MASTR III,806-870MHZ,100W (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	SX8MCX	New
7		PROGRAMMING,NPSPAC	SXNP1A	New
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
7		COVER,SCREEN,T/R SHELF	SXMN9C	New
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
7		Kit, SOR Relay	SXSU3D	New
7		Feature, 4 wire audio	SXSF3J	New
		Mutual Aid Reconfiguration - Verdugo Peak		
2		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		COMBINER,6CH,800MHZ (dbSpectra) - (851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	DSCC85-06N	New
2		Rack,Open,96 in	SCMR1E	New
2		Type 66 Block, Rack Mounted	TBD	New
7		STATION,CONV MASTR III,806-870MHZ,100W (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	SX8MCX	New
7		PROGRAMMING,NPSPAC	SXNP1A	New
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
7		COVER,SCREEN,T/R SHELF	SXMN9C	New
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
7		Kit, SOR Relay	SXSU3D	New

7		Feature, 4 wire audio	SXSF3J	New
		Mutual Aid Equipment - Rolling Hills Transmit		
2		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
1		COMBINER,6CH,800MHZ (dbSpectra) - (851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	DSCC85-06N	New
2		Rack,Open,96 in	SCMR1E	New
2		Type 66 Block, Rack Mounted	TBD	New
7		STATION,CONV MASTR III,806-870MHZ,100W (851.0125 MHz, 851.5125 MHz, 852.0125 MHz, 852.5125 MHz, 853.0125 MHz, 853.5125 MHz, 853.9875 MHz)	SX8MCX	New
7		PROGRAMMING,NPSPAC	SXNP1A	New
7		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
7		COVER,SCREEN,T/R SHELF	SXMN9C	New
7		Kit,Mounting Hrdwr,69/83/86in Cab/Rack	SXMN2D	New
7		Power Supply,120VAC,60Hz,12/24VDC	SXPS9R	New
7		CABLE,RX ANTENNA,NO RELAY,NO DUPLEXER	SXCJ5E	New
7		Kit, SOR Relay	SXSU3D	New
7		Feature, 4 wire audio	SXSF3J	New
		Expendables		
1100		CABLE,COAX,1/2 IN,50 OHM,SUPERFLEX	FSJ4-50B	New
46		CONNECTOR,N MALE,RIGHT ANGLE,FOR FSJ4-50B	F4PNR-HC	New
78		CONNECTOR,N MALE,FOR FSJ4-50B	F4PNMV2-HC	New
200		CABLE,COAX,7/8 IN,50 OHM,PE FOAM	LDF5-50A	New
4		CONNECTOR,N FEMALE,FOR LDF5-50A	L5TNF-PS	New
4		GROUND KIT,FOR LDF5-50A	GK-S78	New
2200		CABLE,COAX,1/4 IN,50 OHM,PE FOAM	FSJ1-50A	New
46		CONNECTOR,BNC MALE,FOR FSJ1-50A	F1TBM-C	New
46		CONNECTOR,N MALE,WITH HEX NUT,FOR FSJ1-50A	F1PNM-HC	New
1700	RF Ind	TNC MALE CRIMP CONNECTOR	RFT-1202-7T	New
		Mutual Aid Equipment - Blackjack Mountain		
1		STATION,CONV MASTR III,806-870MHZ,100W 853.0125T/808.0125R	SX8MCX	New
1		PROGRAMMING,NPSPAC	SXNP1A	New
1		Instruction,Rack-up,Conv 69/83/86 Cab/Rk	SXAP7T	New
1		COVER,SCREEN,T/R SHELF	SXMN9C	New
1		Kit,Mounting Hrdwr,69/83/86in	SXMN2D	New

		Cab/Rack		
1		Power Supply, 120VAC, 60Hz, 12/24VDC	SXPS9R	New
1		CABLE, RX ANTENNA, NO RELAY, NO DUPLEXER	SXCJ5E	New
1		Feature, 4 wire audio	SXSF3J	New
101		P7170IP Radio Type, System, 806-870 MHz	HT7170T81X	New
1069		P7150IP Radio Type, Scan, 806-870 MHz	HT7150S81X	New
1170		FEATURE PACKAGE, EDACS TRUNKING OPERATION (includes Conventional operation)	HTED	New
10		ANTENNA, 806-870 MHZ, FLEXIBLE END FED GAIN	HTNC5K	New
1160		ANTENNA, 806-870 MHZ, WHIP	HTNC1K	New
1170		BATTERY, NIMH, EXTRA HIGH CAPACITY	HTPA7W	New
1170		FEATURE, 800 SYSTEMS/GROUPS	HTPL3R	New
101		MICROPHONE, LAPEL, VEHICULAR CHARGER COMPATIBLE Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	HTAE7F	New
292		MICROPHONE, LAPEL Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	HTAE7A	New
292		BELT LOOP, LEATHER, WITH SWIVEL	HTHC7T	New
878		BELT CLIP, METAL	HTHC7P	New
40		MANUAL MAINTENANCE, P7100IP SERIES, 800 MHZ	MM800HT	New
101		CHARGER, VEHICULAR, ENHANCED, DUAL POSITION Includes Vehicular Charger, Mounting Bracket and Cables, Mic with Hookswitch, Mic Hanger Kit, Speaker, and Installation and Operator's Manuals. For NiCd or NiMH batteries. For this feature, use the speaker mic	H2VPDE	New
2282		P5150 Radio Type (Scan), 806-870 MHz	MAHM-S8DXX	New
460		PORTABLE, P5450, 800MHz, Unencrypted	MAEX-C81XX	New
2272		ANTENNA, 806-870 MHZ, WHIP	MAHM-NC1K	New
10		ANTENNA, 806-870 MHZ, FLEXIBLE END FED GAIN	MAEX-NNC5K	New
450		ANTENNA, 806-870 MHZ, WHIP	MAEX-NNC1K	New
10		ANTENNA, 764-870 MHZ, FLEXIBLE END FED GAIN	MAHM-NC5K	New
460		FEATURE PACKAGE, EDACS TRUNKING OPERATION (includes Conventional operation)	MAEX-PKGED	New
460		FEATURE, 512 SYSTEMS/GROUPS	MAEX-NPL7Z	New
2282		BATTERY, NIMH, EXTRA HIGH	MAHM-PA9P	New

		CAPACITY		
460		BATTERY, NIMH, 2400 MAH	MAEX-NPA9X	New
60		MICROPHONE, LAPEL, VEHICULAR CHARGER COMPATIBLE Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	MAHM-AE7F	New
650		MICROPHONE, LAPEL Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	MAHM-AE7A	New
67		MICROPHONE, LAPEL Includes Rubber PTT Button, Emergency Button, 2-Position Volume Control, and Earphone Jack	MAEX-NAE9D	New
649		BELT LOOP, LEATHER, WITH SWIVEL	MAHM-HC7T	New
37		BELT LOOP, LEATHER, WITH SWIVEL	MAEX-NHC7T	New
1633		BELT CLIP, METAL	MAHM-HC7P	New
423		BELT CLIP, METAL	MAEX-NHC7P	New
40		MANUAL, MAINTENANCE, P5100 SERIES, 800 MHZ	MAMM-800HM	New
20		MANUAL, MAINTENANCE, P5400 SERIES, UHF	MAMM-400EX	New
487		CHARGER, SINGLE, TRI-CHEMISTRY For use with all P5100 batteries except MAHM-NPA2J	MAHM-CH9E	New
383		CHARGER, SINGLE, TRI-CHEMISTRY	MAEX-NCH9T	New
60		CHARGER, MULTI, TRI-CHEMISTRY For use with all P5100 batteries except MAHM-NPA2J	MAHM-CH9A	New
15		CHARGER, MULTI, TRI-CHEMISTRY	MAEX-NCH9U	New
30		CHARGER, VC4000, TRI-CHEMISTRY	MAH2-VC4PB	New
30		POWER ADAPTER KIT, VC4000, CHARGER	MAH2-NPS9X	New
60		CHARGER, VEHICULAR, ENHANCED, DUAL POSITION Includes Vehicular Charger, Mounting Bracket and Cables, Mic with Hookswitch, Mic Hanger Kit, Speaker, and Installation and Operator's Manuals. For NiCd or NiMH batteries. For this feature, use the speaker mic designated as Vehicular Charger Compatible.	H2VPDE	New
3		BATTERY CONDITIONER/ANALYZER, 4 BAYS, Requires sleeves below	CADEX-7400	New
12		ADAPTER, SLEEVE FOR CADEX-7400 SYSTEM FOR NICD/NIMH BATTERIES	CADEX-C7 Adapter	New

1		BATTERY CONDITIONER/ANALYZER, IQ5 SYSTEM, 6 BAYS, Requires NiCd/NiMH sleeves below	BC3506QP-5	New
12		ADAPTER, SLEEVE FOR IQ5 SYSTEM, NIMH BATTERIES	BA4547	New
2335		M7100IP Radio Type, 806-870 MHz, 35W	MAHG-S8MXX	New
2335		FEATURE PACKAGE, EDACS TRUNKING OPERATION (includes Conventional operation)	MAHG-ED	New
194		CONTROL UNIT, SYSTEM, FRONT MOUNT	MAHG-CP7V	New
2032		CONTROL UNIT, SCAN, REMOTE MOUNT	MAHG-CP7W	New
109		CONTROL UNIT, SCAN, FRONT MOUNT	MAHG-CP7U	New
194		MICROPHONE, DESK	MAHG-MC5A	New
2141		MICROPHONE, MOBILE	MAHG-MC7T	New
2032		KIT, ACCESSORY, REMOTE MOUNT, 50W TX AND BELOW	MAHG-ZN5X	New
126		KIT, ACCESSORY, FRONT MOUNT, 50W TX AND BELOW	MAHG-ZN5W	New
2287		FEATURE, 800 EDACS SYSTEMS/GROUPS	MAHG-PL3R	New
50		MANUAL, MAINTENANCE, M7100 SERIES, 800 MHZ	MAMM-800HG	New
27		DESKTOP BASE, TONE REMOTE, LOCAL CONTROL, CLOCK/VU METER	DSDX07	New
150		DESKTOP BASE, WITH CLOCK/VU METER, LOCAL CONTROL	DSDX08	New

3) Replaced Equipment (to be delivered to Nextel prior to Closing)

Quantity	Manufacturer	Description	Model Number
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
2		Mastr II Receiver	Mastr II Receiver
2		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II

1		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
1		800 MHz Combiner - 8 Port	DB8062F8-B
7		Mastr II Conventional Repeater	Mastr II
7		Power Supply	Power Supply
1		800 MHz Combiner - 8 Port	DB8062F8-B
7		Mastr II Conventional Repeater	Mastr II
7		Power Supply	Power Supply
1		Mastr II Conventional Repeater (Tone control 6 chan TX with 5 AUX Mastr II Receivers)	Mastr II
7		Power Supply	Power Supply
1		Mastr II Conventional Repeater (Tone control 6 chan TX with 5 AUX Mastr II Receivers)	Mastr II
7		Power Supply	Power Supply
1		Mastr II Conventional Repeater	Mastr II
1		Power Supply	Power Supply
100		MPA EDACS System Portable Radio (each with EDACS operation and system keypad)	MPA (System)
1		700P System Portable Radio (each with EDACS operation and system keypad)	700P (System)
1069		MPA EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	MPA (Scan)
10		Flexible End Fed Antenna	Flex Antenna
1160		Portable Antenna	Antenna
1170		Extra Hi Cap Battery	Extra Hi Cap Battery
101		Vehicular Lapel Microphone	Lapel Microphone
292		Lapel Microphone	Lapel Microphone
292		Belt Loop	Belt Loop
878		Belt Clip	Belt Clip
101		Dual Position Vehicular Charger	Vehicular Charger
579		MTL EDACS Portable Radio (each with EDACS operation)	MTL
131		LPE-200 LBS Model EDACS Scan Portable Radio (each with EDACS operation, scan keypad and must be one of the following LBS models: KRD 103 103/A31, A32, A41, A42)	LPE-200 (KRD 103 103/A31, A32, A41, A42)
386		300P EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	300P (Scan)
48		PCS EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	PCS (Scan)
461		MRK EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	MRK (Scan)
636		700P EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	700P (Scan)
41		LPE-50 EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	LPE-50 (Scan)
96		MPA EDACS Select Portable Radio	MPA (Select)

		(each with EDACS operation and select keypad)	
51		MRK Select Portable Radio (each with EDACS operation and select keypad)	MRK (Select)
313		MRK EDACS Scan Portable Radio (each with EDACS operation and scan keypad)	MRK (Scan)
2742		Portable Antenna	Antenna
2742		Extra Hi Cap Battery	Extra Hi Cap Battery
777		Vehicular Lapel Microphone	Lapel Microphone
686		Belt Loop	Belt Loop
2056		Belt Clip	Belt Clip
870		Single Unit Charger	Single Unit Charger
75		Mult Unit Charger	Mult Unit Charger
60		Vehicular Charger Component	Vehicular Charger
60		Dual Position Vehicular Charger	Vehicular Charger
3		Battery Conditioner	Battery Conditioner
1		Battery Conditioner/Analyzer	Battery Conditioner / Analyzer
1662		Rangr EDACS System Mobile Radio (each with EDACS operation, system remote mount control unit and must be one of the following NPSPAC models: 19C852802P1 or P2)	Rangr (System) (19C852802P1 or P2)
31		MDX EDACS Scan Mobile Radio (each with EDACS operation and scan front mount control unit)	MDX (Scan)
11		FMD EDACS System Mobile Radio (each with EDACS operation, system front mount control unit and must be one of the following NPSPAC models: 19C336860P7, P8, P10, P11, or P13 through P18)	FMD (System) (19C336860P7, P8, P10, P11, or P13 through P18)
153		Rangr EDACS System Mobile Radio (each with EDACS operation, system front mount control unit and must be one of the following NPSPAC models: 19C852802P1 or P2))	Rangr (System) (19C852802P1 or P2)
6		MDX EDACS System Mobile Radio (each with EDACS operation and system front mount control unit)	MDX (System)
370		Orion EDACS Scan Mobile Radio (each with EDACS operation and scan remote mount control unit)	Orion (Scan)
78		500M EDACS System Mobile Radio (each with EDACS operation and System remote mount control unit)	500M (Scan)
7		Orion EDACS System Mobile Radio (each with EDACS operation and System remote mount control unit)	Orion (System)
17		500M EDACS System Mobile Radio (each with EDACS operation and System remote mount control unit)	500M (System)
194		Desk Microphone	Desk Microphone

2141		Mobile Microphone	Mobile Microphone
27		DESKTOP BASE, TONE REMOTE, LOCAL CONTROL, CLOCK/VU METER	Desktop Base
150		DESKTOP BASE, WITH CLOCK/VU METER, LOCAL CONTROL	Desktop Base

4) Reserved

5) Reserved

SCHEDULE E

Product Typical Values

The Product Typical Values for Replacement Equipment shall be:

- a. for Replacement Equipment set forth on Schedule C, the cost shown on Schedule C for the item of Replacement Equipment; or
- b. for Replacement Equipment comprising Harris subscriber radios, options and accessories, the most recent price list as of the date a reconciliation statement is sent to Incumbent by Nextel less 15%.

In lieu of paying the Product Typical Value as stated above, Incumbent may choose to purchase Comparable Equipment, defined below, from any source and send the equipment, along with adequate documentation, to Nextel prior to the Reconciliation Date. Comparable Equipment, shall mean equipment of the same condition (e.g. new for new or used for used) and from the same manufacturer, that is the identical model and includes the same options and accessories as the Replacement Equipment provided by Nextel.

|

Exhibit A

Incumbent Information

The following questions are required for processing Electronic Funds Transfers and if Incumbent wants Nextel to complete the FCC filings on its behalf. All information contained herein shall be kept strictly confidential and will be used only in completion of the Frequency Reconfiguration transaction.

I. INCUMBENT INFORMATION

Please provide the following information:

Company/Name: _____

Contact: _____ Title: _____

Address: _____

City/State/Zip: _____

Phone: _____ Fax: _____

Email: _____

Check Appropriate Box: ☐ Individual/Sole Proprietor ☐ Corporation ☐ Partnership
☐ Other _____

II. BANK ACCOUNT INFORMATION (Required for payment processing.) – N/A

Please select preferred payment method: ☐ Wire Transfer ☐ ACH ☐ Check

Name of Bank: _____

Address of Bank: _____

City/State/Zip: _____

Bank Phone #: _____

ABA (Routing #): _____

Account #: _____

Name on Account: _____

Federal, State or Individual SS #: _____

Name of Brokerage Firm (if applicable): _____

Brokerage Account # (if applicable): _____

In the event Incumbent will not provide information for Wire Transfer or ACH, Incumbent acknowledges that all payments will be made by check.

Acknowledged by Incumbent: _____
(signature required only if Incumbent does not want an electronic funds transfer)

III. TAX INFORMATION

The Internal Revenue Service and state tax authorities require Nextel to report all transactions, even if the transaction is exempt from taxation (if so, it will be reported to the IRS as a like-kind exchange). Therefore, it is necessary for Nextel to collect the information below. If you have specific questions about your tax implications in this transaction, you should consult your own accountant or financial advisor.

Incumbent's Federal or Individual Tax ID #,
FEIN (Federal) or SSN (individuals):

State(s) – sales tax license, resale permit,
employment, etc.):

Local (if applicable):

Current State and County location for your
principal executive office:

If there has been more than one location for
the principal executive office within the past
five (5) years, list each such
City/County/State location:

IV. FINANCIAL RECONCILIATION CONTACT INFORMATION (indicate one)

A. Check here if *same* as indicated in Item I above _____

B. Fill in below if *different* from Item I above as follows:

Financial Contact Name: _____

Title: _____

Address: _____

City/State/Zip: _____

Phone: _____ **Fax:** _____

Email: _____

V. REGULATORY INFORMATION

Would you like Nextel's Regulatory department to prepare and file all necessary FCC
paperwork on your behalf? Yes / No

If yes, please provide the following **Universal Licensing System (“ULS”)** information for your licenses:

FRN (FCC Registration Number): _____

ULS PASSWORD: _____

Contact Representative for any FCC related issues:

Name: _____

Phone Number: _____

If no, please provide the following information regarding who will take care of the preparation and filing of all necessary FCC paperwork on your behalf:

Contact Name: _____

Organization: _____

Address: _____

City: _____

State/Zip: _____

Phone Number: _____

Email Address: _____

I hereby acknowledge that all of the information provided herein is true and correct as of the date signed below.

Incumbent Signature: _____

Print Name: _____

Title: _____

Date: _____

Exhibit B(1)
Reconciliation Documentation
Certification of Labor

Incumbent hereby certifies that the internal labor information provided for the Frequency Reconfiguration Agreement, dated _____, with Nextel (the "FRA") is true and complete to the best of Incumbent's knowledge. Incumbent further certifies that the number of planning or reconfiguration tasks that the Incumbent performed using internal labor for each labor category on the TA-approved Cost Estimate and/or the number of internal labor hours incurred in performing planning or reconfiguration tasks for each labor category on the TA-approved Cost Estimate (included in the FRA) were for 800MHz Planning or Reconfiguration and have been documented in accordance with the TA's policy on Incumbent Labor at <http://www.800ta.org/content/PDF/policy/IncumbentLaborPolicy.pdf> as of the Effective Date of the FRA. Incumbent acknowledges that the reconciliation documentation and related supporting records for the FRA are subject to the Review Rights (as that term is defined in the FRA with Nextel) of the TA.

Incumbent Name: _____

Signature: _____

Name: _____

Title: _____

Date: _____

Exhibit B(2)
Reconciliation Documentation
Time Sheet Documentation

THIS IS AN EXAMPLE DOCUMENT
THE ACTUAL DOCUMENT IS AVAILABLE FROM THE NEXTEL FINANCE
DEPARTMENT

Deal ID:

Deal Name:

Name	* Date	** <u>Schedule C</u> Category of Work	Description of Work Performed (ties back to <u>Schedule C</u>)	Actual Hours Worked	*** Rate (hourly)	Total Cost
					TOTAL COST	\$

CERTIFICATION:

Incumbent hereby certifies that the internal labor information provided for the Frequency Reconfiguration Agreement, dated _____, with Nextel (the "FRA") is true and complete to the best of Incumbent's knowledge. Incumbent further certifies that the number of internal labor hours incurred in performing planning or reconfiguration tasks for each labor category on the TA-approved Cost Estimate (included in the FRA) were for 800MHz Planning or Reconfiguration and have been documented in accordance with the TA's policy on Incumbent Labor at <http://www.800ta.org/content/PDF/policy/IncumbentLaborPolicy.pdf> as of the Effective Date of the FRA. Incumbent acknowledges that the reconciliation documentation and related supporting records for the FRA are subject to the Review Rights (as that term is defined in the FRA with Nextel) of the TA.

Incumbent Name: _____

Signature: _____

Title: _____

Date: _____

*Separate entries for each date when labor expense was incurred must be provided on a per employee basis. Date ranges will not be accepted.

**A total should be provided for each Schedule C category. Subtotals can be provided within the page or a separate page can be used for each category/grouping.

***Hourly rates may not exceed the Schedule C negotiated rate for similar reconfiguration/planning activities unless accompanied by an approved change notice that explains why a higher rate was necessary to complete reconfiguration/planning.

Exhibit B(3)
Reconciliation Documentation
Per Unit Summary Documentation

THIS IS AN EXAMPLE DOCUMENT
THE ACTUAL DOCUMENT IS AVAILABLE FROM THE NEXTEL FINANCE
DEPARTMENT

Deal ID:

Deal Name:

* <u>Schedule C</u> Category of Work	Description of Work Performed (ties back to <u>Schedule C</u>)	** Quantified Units	*** Rate (Per Unit)	Total Cost
				\$

CERTIFICATION:

Incumbent hereby certifies that the internal labor information provided for the Frequency Reconfiguration Agreement, dated _____, with Nextel (the "FRA") is true and complete to the best of Incumbent's knowledge. Incumbent further certifies that the number of planning or reconfiguration tasks that the Incumbent performed using internal labor for each labor category on the TA-approved Cost Estimate (included in the FRA) were for 800MHz Planning or Reconfiguration and have been documented in accordance with the TA's policy on Incumbent Labor at <http://www.800ta.org/content/PDF/policy/IncumbentLaborPolicy.pdf> as of the Effective Date of the FRA. Incumbent acknowledges that the reconciliation documentation and related supporting records for the FRA are subject to the Review Rights (as that term is defined in the FRA with Nextel) of the TA.

Incumbent Name: _____

Signature: _____

Title: _____

Date: _____

*A total should be provided for each Schedule C category. Subtotals can be provided within the page or a separate page can be used for each category/grouping.

**A detailed list identifying the individual units (by serial number or other unique identifying factor) must be provided in addition to this summary document.

***Per unit rates may not exceed the Schedule C negotiated rate for similar reconfiguration/planning activities unless accompanied by an approved change notice that explains why a higher rate was necessary to complete reconfiguration/planning.

Exhibit C

Exhibit to Illustrate Compliance with Transition Administrator New System Policy

1. Licensees must submit an implementation schedule for reconfiguration that is absent of any new system or replacements not required for reconfiguration, and demonstrate to the TA's satisfaction that the proposed new system reconfiguration will not lengthen this schedule.

See attached proposed implementation schedule.

2. Submit a Cost Estimate for the full reconfiguration of the existing system absent of any new system or replacements not required for reconfiguration, and certify that the costs in this Cost Estimate are the "minimum necessary" to provide facilities comparable to those presently in use.

See attached PRW from Nextel.

3. Disclose to the TA a description of the planned new system along with an estimate of the work and costs for the new system.

Incumbent will migrate from the Los Angeles County's EDACS system to a proposed P25 system. See attached Harris Corporation P25 Statement of Work.



P25 Phase 1 Statement of Work
Final 2013-04-29

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Attachment A, Site Migration Drawings

Attachment B, Project Schedule, Date: April 25, 2013

Attachment C, Functional Test Procedure, Date: April 16, 2013

Attachment D, Coverage Characterization Test Procedure, Date: April 16, 2013

Attachment E, T1_Public Safety Leased T1 Specification, Rev: B, Date: December 5, 2011

Appendix A, Existing CWIRS EDACS System

1.P25 System Overview

Harris Corporation, RF Communications Division provides this Statement of Work to serve as the framework for migration from the Los Angeles County's EDACS system to a P25 Phase 1 system. This document presents Harris' reband-to-P25 scope of work.

The existing simulcast designs for Basin and Countywide were optimized to serve the County's demographics of more than 20 years ago and no longer provide optimal coverage to the zones' current users. As the County demographics have evolved, the capacity allocations of the EDACS sub-systems have become less effective. The multisites borrow frequencies from the Basin simulcast, reducing the Basin system's effectiveness. CWIRS is charged with supporting subscribers in the protection of the lives and property of the County's 10 million residents. To resolve the system's current shortcomings, Harris will install the P25 Phase 1 system, which places coverage and capacity more optimally.

With a reconfigured P25 Phase 1 system, the notion of a single, countywide simulcast system is replaced with a networked, multizone system of simulcast cells and multicast sites that places coverage and capacity in more manageable groupings. The P25 Phase 1 system contains four simulcast zones and five multisite zones described in Figure 1.

Figure 1. CWIRS' P25 Operational Zones

Zone	Number of Channels	Sites
Basin Simulcast	10	Verdugo Peak (VPK) Mount Lukens (MLU) Criminal Courts (CCT) Oat Mountain (OAT)
West Simulcast	10	Castro Peak (CPK) Rolling Hills Transmit (RHT)
Northwest Simulcast	5	Burnt Peak (BUR) Bald Mountain (BMT) Tejon Peak (TPK)
East Simulcast	8	Johnstone Peak (JPK) Puente Hills Nike (PHN) San Dimas (SDM) Rio Hondo (RIH)
Lower Blue Ridge Multisite	5	Lower Blue Ridge (LBR)
Whitaker Middle Peak Multisite	5	Whitaker Middle Peak (WPK)
Black Jack Mountain Multisite	5	Black Jack Mountain (BJM)
Hauser Peak Multisite	6	Hauser Peak (HPK)
Blue Rock Multisite	5	Blue Rock (BRK)

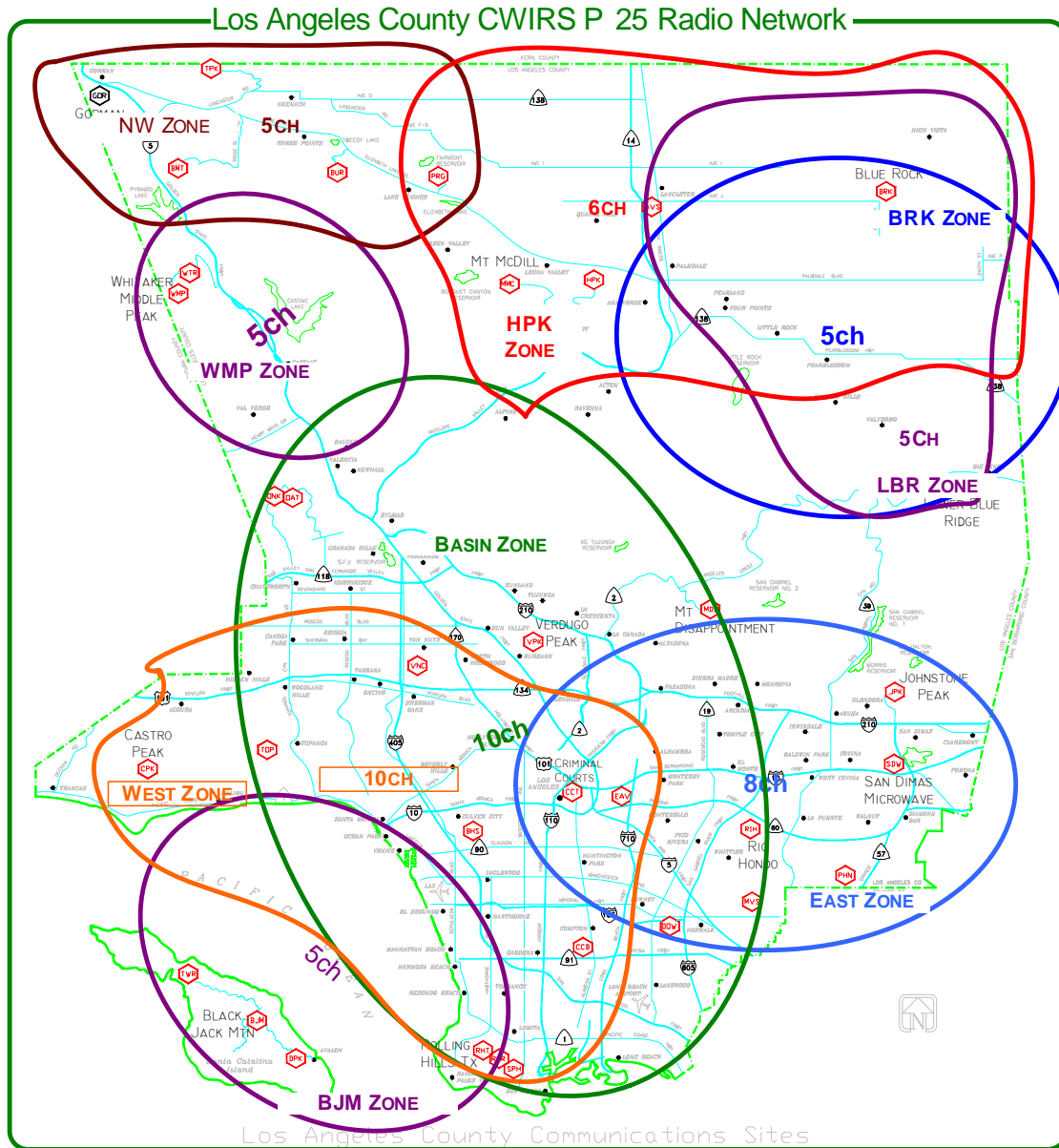
These systems will be combined to form the coverage approach depicted in Figure 2.

The proposed migration will follow a parallel approach and will require the County to reduce a portion of CWIRS' capacity on the EDACS system for the duration of the reconfiguration project. This reduction averts the need for additional site civil work. After cutover, the new traffic capacity of the P25 Phase 1 system will change in accordance with the new system reconfiguration. The total capacity will be scalable, pending the County's ability to obtain additional frequencies.

The project's plan will optimize the stages required to execute cutover to the reconfigured system. Harris will work with the County to ensure the plan proceeds smoothly and in accordance with County procedures and risk tolerances. The plan involves the County migrating to Harris' MASTR V stations, which are capable of being configured so that eight stations fit in one rack. The MASTR V stations will occupy less rack space than the County's current MASTR II and MASTR III stations, however, the power draw for MASTR V stations will be higher due to the application of linear amplification technology. The County will be responsible for ensuring adequate power for the MASTR V stations.

The new P25 Phase 1 system will utilize the County's existing VIDA equipment, including, High Availability (HA) Network Switching Center (NSC) and two simulcast control points. Using the existing VIDA Interoperability Gateways, the P25 system will support a connection to 24 conventional radio interfaces or stations, functioning similar to the existing conventional interfaces in the Integrated Multisite and Console Controller (IMC). Twelve additional C3 Maestro^{IP} consoles will augment the County's existing inventory to complete the EDACS-to-P25 migration.

Figure 2. CWIRS Site/System Final Configuration and Coverage Areas



CWIRS users utilize a variety of subscriber equipment, comprising approximately 7,741 portable radios, mobile radios, and control stations. The County has a quantity of 1,494 radios consisting of 5100, 5400, 5500, 7100, and 7300 models that are P25 Phase 1-upgradable. Harris will upgrade these radios with P25 Phase 1 firmware as appropriate. The County has 6,247 radios that are not P25-upgradeable. Sprint will replace these radios and the replacement radios will ship from the factory with EDACS and P25 Phase 1 software installed.

2.P25 Rebanding Approach

2.1 P25 Parallel Infrastructure Overview

Transitioning more than 7,700 subscribers to the new frequencies must be expedient and as transparent as possible to subscribers. Harris shall reconfigure the County simulcast cells, increasing the number of simulcast cells from two to four while reducing the number of sites per cell. This new design will decrease time-domain interference (TDI), improve continued operations for the CWIRS stakeholder agencies, and enable the joint project team to efficiently transition the EDACS users to P25 Phase 1.

2.2 Parallel Reconfiguration Approach

The County and Harris recognize that a full-parallel approach requires additional facility space, additional temporary facilities, additional temporary towers, and additional site improvements. These additions add considerable complexity, time, and cost to the project. To expedite the transition process, migrate to P25, and remain cost-effective, Harris and the County will implement the following optimized parallel approach:

- Use the existing PR9D Networking Switching Center at Eastern Ave
- Reduce the 20-channel, EDACS Countywide simulcast system to 10-channel simulcast during the transition
- Install two new P25 simulcast control points at Eastern Ave, augmenting the existing two P25 simulcast control points
- Install new P25 site equipment in sites as space allows, activating channels per the transition plan
- If necessary, install and/or activate remaining P25 Phase 1 site channels as appropriate when EDACS equipment is decommissioned and removed
- Install 12 C3 MaestroIP Consoles to replace the remaining C3 Maestro consoles

Figure 3 depicts the CWIRS EDACS system with the interim configuration and capacity during the transition to the P25 Phase 1 system.

Figure 3. CWIRS Site / System Interim Configuration

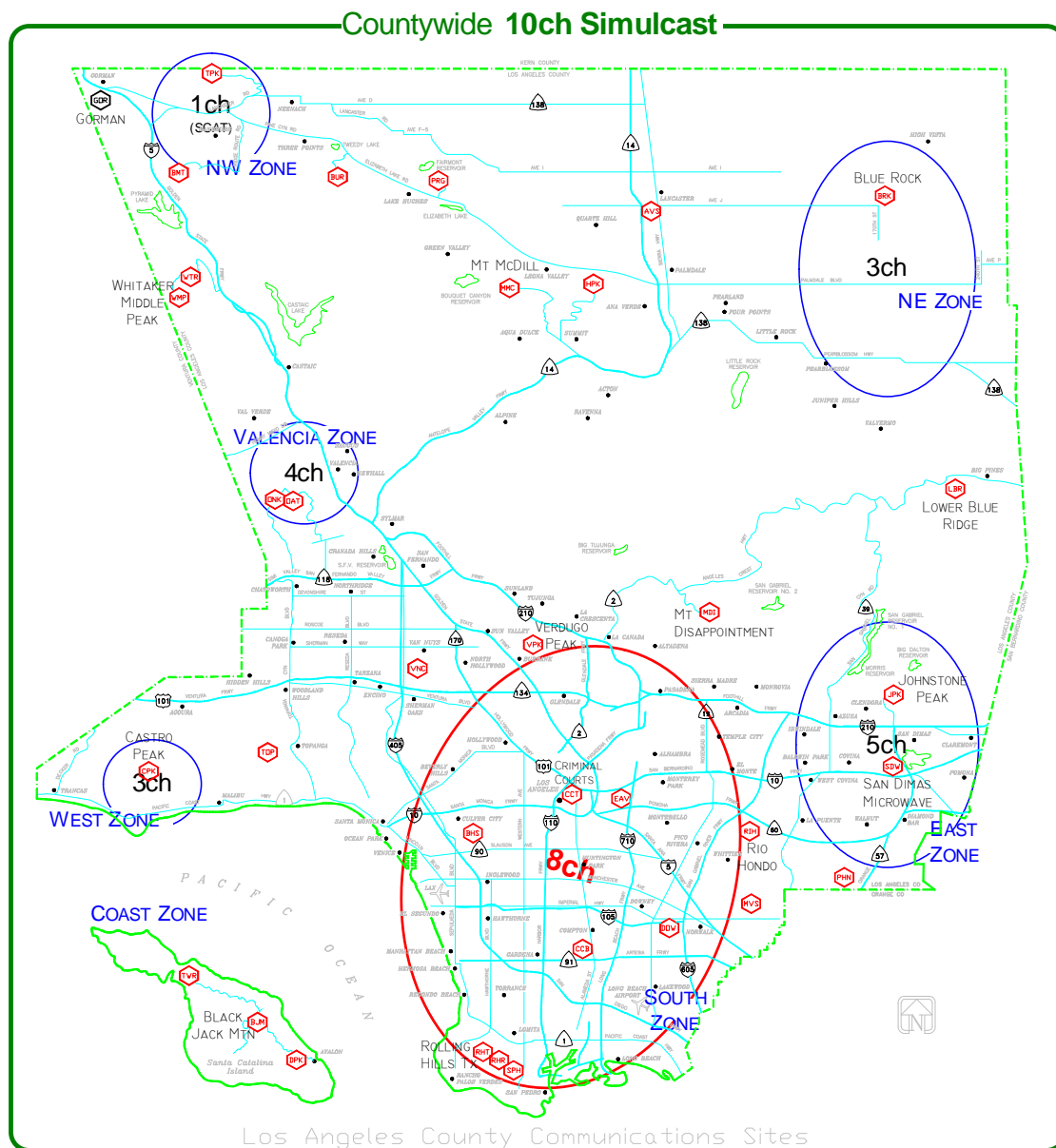
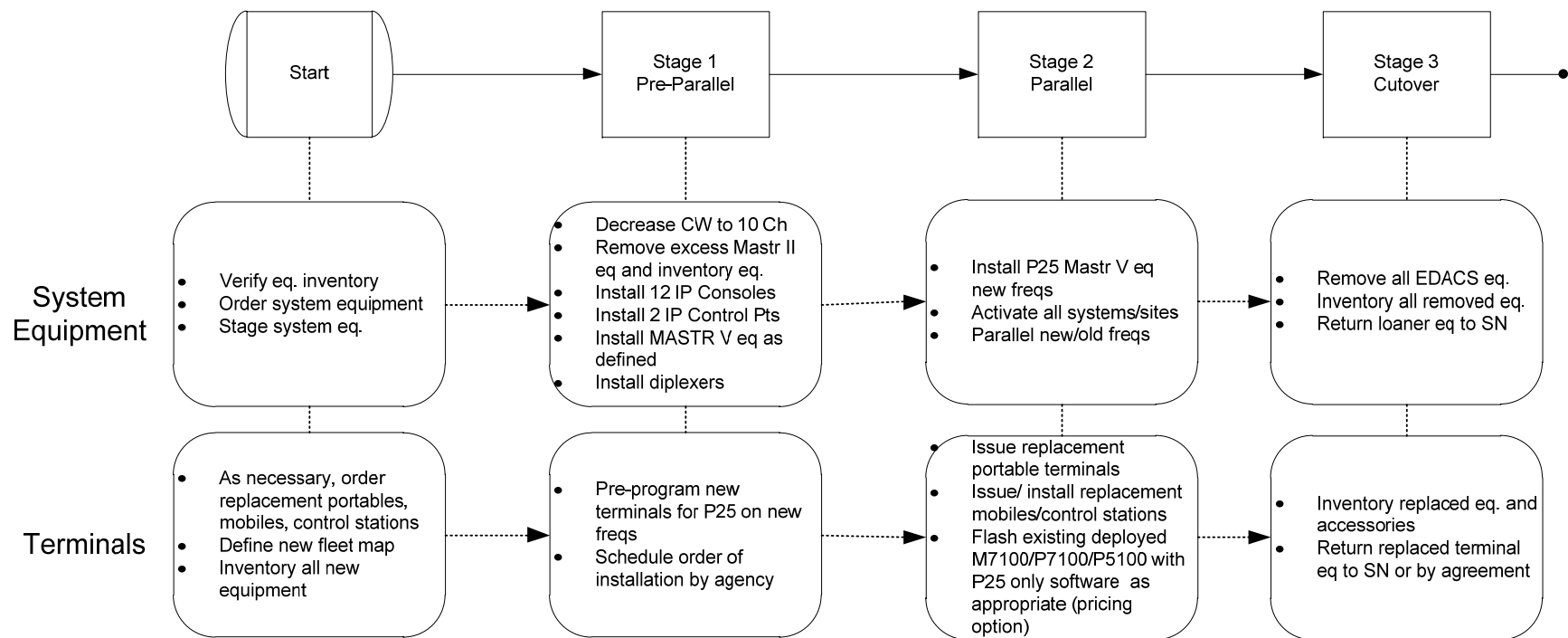


Figure 4 portrays the reconfiguration process to achieve the proposed enhanced design.

Figure 4. Project Process Overview for P25 Migration Design



Details of channel deployment by zone and site are provided in Figure 5.

Figure 5. Master Channel Allocation Table – New P25 System

Existing Channel #	Proposed Channel #	Proposed TX Frequency (MHz)	Proposed RX Frequency (MHz)	VPK	MLU	CCT	OAT	CPK	RHT	BUR	BMT	TPK	LBR	WMP	BJM	HPK	BRK	JPK	PHN	SDM	RIH
CW1	BA1	851.0875	806.0875	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW2	BA2	851.2500	806.2500	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW3	BA3	851.2750	806.2750	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW4	BA4	851.3000	806.3000	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW5	BA5	851.5875	806.5875	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CW6	LBR1	851.7750	806.7750	-	-	-	-	-	-	-	-	-	T	-	-	-	-	-	-	-	-
CW7	LBR2	851.8000	806.8000	-	-	-	-	-	-	-	-	-	T	-	-	-	-	-	-	-	-
CW8	LBR3	851.9375	806.9375	-	-	-	-	-	-	-	-	-	T	-	-	-	-	-	-	-	-
CW9	LBR4	852.2250	807.2250	-	-	-	-	-	-	-	-	-	T	-	-	-	-	-	-	-	-
CW10	LBR5/WMP1	852.2500	807.2500	-	-	-	-	-	-	-	-	-	T	T	-	-	-	-	-	-	-
CW11	WE1	852.2750	807.2750	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
CW12	WE2	852.7250	807.7250	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
CW13	WE3	852.7750	807.7750	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
CW14	WE4	852.8000	807.8000	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
CW15	WE5	853.0875	808.0875	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
CW16	NW1	853.2500	808.2500	-	-	-	-	-	-	T	T	T	-	-	-	-	-	-	-	-	-
CW17	NW2	853.2750	808.2750	-	-	-	-	-	-	T	T	T	-	-	-	-	-	-	-	-	-
CW18	NW3	853.7250	808.7250	-	-	-	-	-	-	T	T	T	-	-	-	-	-	-	-	-	-
CW19	NW4	853.7750	808.7750	-	-	-	-	-	-	T	T	T	-	-	-	-	-	-	-	-	-
CW20	NW5	853.8000	808.8000	-	-	-	-	-	-	T	T	T	-	-	-	-	-	-	-	-	-
BA1	WE6	851.0625	806.0625	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
BA2	WE7	851.4375	806.4375	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
BA3	WE8	851.7250	806.7250	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
BA4	WE9	852.0625	807.0625	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
BA5	WE10	852.5875	807.5875	-	-	-	-	T	T	-	-	-	-	-	-	-	-	-	-	-	-
BA6	BA6	852.9375	807.9375	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BA7	BA7	853.2250	808.2250	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BA8	BA8	851.2250	806.2250	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BA9	BA9	851.7500	806.7500	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BA10	BA10	852.0875	807.0875	T	T	T	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BA11	BJM1/BRK1	852.4375	807.4375	-	-	-	-	-	-	-	-	-	-	-	T*	-	T*	-	-	-	-
BA12	HPK1/EA1	852.7500	807.7500	-	-	-	-	-	-	-	-	-	-	-	-	T*	-	T	T	T	T
BA13	BJM2/BRK2	853.0625	808.0625	-	-	-	-	-	-	-	-	-	-	-	T	-	T	-	-	-	-
BA14	HPK2/EA2	853.7500	808.7500	-	-	-	-	-	-	-	-	-	-	-	-	T	-	T	T	T	T
BA15	HPK3/EA3	853.4375	808.4375	-	-	-	-	-	-	-	-	-	-	-	-	T*	-	T	T	T	T
BA16	EA4	853.5875	808.5875	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T	T	T
BA17	BJM4/HPK5	851.9625	806.9625	-	-	-	-	-	-	-	-	-	-	-	-	T*	-	-	-	-	-
BA18	HPK5/EA6	852.3000	807.3000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T	T	T
BA19	HPK6/EA7	852.9625	807.9625	-	-	-	-	-	-	-	-	-	-	-	-	T*	-	T	T	T	T
BA20	EA8	853.3000	808.3000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	T	T	T
NE1	BRK3	853.6125	808.6125	-	-	-	-	-	-	-	-	-	-	-	T	-	T	-	-	-	-
NE2	BRK4	853.8375	808.8375	-	-	-	-	-	-	-	-	-	-	-	T	-	T	-	-	-	-
NE3	BRK5	853.9125	808.9125	-	-	-	-	-	-	-	-	-	-	-	T	-	T	-	-	-	-
VZ1	WMP2	851.2125	806.2125	-	-	-	-	-	-	-	-	-	-	T*	-	-	-	-	-	-	-
VZ2	WMP3	851.7125	806.7125	-	-	-	-	-	-	-	-	-	-	T*	-	-	-	-	-	-	-
VZ3	WMP4	852.3125	807.3125	-	-	-	-	-	-	-	-	-	-	T*	-	-	-	-	-	-	-
VZ4	WMP5	853.2125	808.2125	-	-	-	-	-	-	-	-	-	-	T*	-	-	-	-	-	-	-

Key			
R	Receive Only	*	Needs a waiver for license
T	Transmit/Receive		Reused Frequency
-	Not Used		

Figure 6 exhibits the end results of the process exhibited in Figure 4 as well as the final reconfiguration equipment summary at the conclusion of the project.

This Statement of Work provides equipment to implement the migration in the quantities stated below.

Figure 6. Final Equipment Reconfiguration Summary

Equipment	Existing Qty	Reprogram & Retune	New Quantity	Retune / Replace By
Network Switching Center				
High Availability Network Switching Servers	1	1		Harris
EDACS-IP Gateway	1	1		Harris
Regional Site Manager Pro	2	1		Harris
Network Equipment (Routers and Switches)	2	1		Harris
VIDA Appliance Servers	Lot	Lot		Harris
Basin becomes Basin Zone (Partial 1 of 2)				
Number of Repeater Sites	5	-	3	Harris
Total Number of Receiver Sites	1	-	-	-
Total Number of Trunked Channels	20	-	10	Harris
Total Number of Tx Combiners	5		6	Harris
Total Number of Repeaters	100		30	Harris
Total Number of Auxiliary Receivers	20	-	-	-
Total Number of Tx Antennas	15	-	6	Harris
Total Number of TTA & Multicouplers	-	-	3	Harris
Total number of Rx Antennas	-	-	3	Harris
Valencia Zone becomes Basin Zone (Partial 2 of 2)				
Number of Repeater Sites	1	-	1	Harris
Total Number of Receiver Sites	-	-	-	-
Total Number of Trunked Channels	4	-	10	Harris
Total Number of Repeaters	4	-	10	Harris
Total Number of Auxiliary Receivers	-	-	-	-
Total Number of Tx Combiners	1	-	2	Harris
Total Number of Tx Antennas	2	-	2	-
Total Number of TTA & Multicouplers	1	-	1	Harris
Total number of Rx Antennas	1	-	1	-
East Zone becomes East Zone				
Number of Repeater Sites	1	-	4	Harris

Equipment	Existing Qty	Reprogram & Retune	New Quantity	Retune / Replace By
Total Number of Receiver Sites	1	-	-	-
Total Number of Trunked Channels	5	-	8	Harris
Total Number of Repeaters	5	-	32	Harris
Total Number of Auxiliary Receivers	5	-	-	-
Total Number of Tx Combiners	1	-	8	Harris
Total Number of Tx Antennas	2	-	8	Harris
Total Number of TTA & Multicouplers	2	-	4	Harris
Total number of Rx Antennas	1	-	4	Harris
Coastal Zone becomes Blackjack Mtn Multisite				
Number of Repeater Sites	1	-	1	Harris
Total Number of Receiver Sites	2	-		Harris
Total Number of Trunked Channels	4	-	5	Harris
Total Number of Repeaters	4	-	5	Harris
Total Number of Auxiliary Receivers	8	-	-	-
Total Number of Tx Combiners	1	-	1	Harris
Total Number of Tx Antennas	2	-	1	Harris
Total Number of TTA & Multicouplers	3	-	1	Harris
Total number of Rx Antennas	3	-	1	-
West Zone becomes West Zone				
Number of Repeater Sites	1	-	2	Harris
Total Number of Receiver Sites	-	-	-	-
Total Number of Trunked Channels	3	-	10	Harris
Total Number of Repeaters	3	-	20	Harris
Total Number of Auxiliary Receivers	-	-	-	-
Total Number of Tx Combiners	1	-	4	Harris
Total Number of Tx Antennas	2	-	4	Harris
Total Number of TTA & Multicouplers	1	-	2	Harris
Total number of Rx Antennas	1	-	2	Harris
Whitaker Middle Peak Multisite				
Number of Repeater Sites	0	-	1	Harris
Total Number of Receiver Sites	-	-	-	-



Equipment	Existing Qty	Reprogram & Retune	New Quantity	Retune / Replace By
Total Number of Trunked Channels	0	-	5	Harris
Total Number of Repeaters	0	-	5	Harris
Total Number of Auxiliary Receivers	-	-	-	-
Total Number of Tx Combiners	0	-	1	Harris
Total Number of Tx Antennas	0	-	1	Harris
Total Number of TTA & Multicouplers	0	-	1	Harris
Total number of Rx Antennas	0	-	1	Harris
Freeway 14 Zone becomes Hauser Peak Multisite				
Number of Repeater Sites	1	-	1	Harris
Total Number of Receiver Sites	-	-	-	-
Total Number of Trunked Channels	1	-	6	Harris
Total Number of Repeaters	1	-	6	Harris
Total Number of Auxiliary Receivers	-	-	-	-
Total Number of Tx Combiners	-	-	2	Harris
Total Number of Tx Antennas	1	-	2	Harris
Total Number of TTA & Multicouplers	-	-	1	Harris
Total number of Rx Antennas	1	-	1	Harris
Northeast Zone becomes Lower Blue Ridge(Partial 1 of 2)				
Number of Repeater Sites	1	-	1	Harris
Total Number of Receiver Sites	-	-	-	-
Total Number of Trunked Channels	3	-	5	Harris
Total Number of Repeaters	3	-	5	Harris
Total Number of Auxiliary Receivers	-	-	-	-
Total Number of Tx Combiners	1	-	1	Harris
Total Number of Tx Antennas	1	-	1	Harris
Total Number of TTA & Multicouplers	1	-	1	Harris
Total number of Rx Antennas	1	-	1	Harris
Northeast Zone becomes Blue Rock Multisites(Partial 2 of 2)				
Number of Repeater Sites	1	-	1	Harris
Total Number of Receiver Sites	-	-	-	-
Total Number of Trunked Channels	3	-	5	Harris



Equipment	Existing Qty	Reprogram & Retune	New Quantity	Retune / Replace By
Total Number of Repeaters	3	-	5	Harris
Total Number of Auxiliary Receivers	-	-	-	-
Total Number of Tx Combiners	1	-	1	Harris
Total Number of Tx Antennas	1	-	1	Harris
Total Number of TTA & Multicouplers	1	-	1	Harris
Total number of Rx Antennas	1	-	1	Harris
Northwest Zone becomes NW Zone				
Number of Repeater Sites	1	-	3	Harris
Total Number of Receiver Sites	-	-	-	-
Total Number of Trunked Channels	1	-	5	Harris
Total Number of Repeaters	1	-	15	Harris
Total Number of Auxiliary Receivers	-	-	-	-
Total Number of Tx Combiners	-	-	3	Harris
Total Number of Tx Antennas	1	-	3	Harris
Total Number of TTA & Multicouplers	-	-	3	Harris
Total number of Rx Antennas	1	-	3	Harris
Subscriber Equipment				
Portable Units				
EDACS 300P Scan	386	-	386	Sprint
LPE SCAN	8		8	Sprint
LPE 200	123	-	123	Sprint
LPE 50	41	-	41	Sprint
MTL	579	-	579	Sprint
MPA Scan	1115	-	1115	Sprint
MPA Select	96	-	96	Sprint
MPA System	54	-	54	Sprint
PCS Scan	48	-	48	Sprint
MRK Select	51	-	51	Sprint
MRK Scan	111	-	111	Sprint
MRK System	663	-	663	Sprint
Jaguar 700P	637	-	637	Sprint



Equipment	Existing Qty	Reprogram & Retune	New Quantity	Retune / Replace By
P5100	286	286*		Harris
P7100 Scan	680	680*		Harris
P7300 Scan	16	16		Harris
P5400 Sys	6	6		Harris
P5400 Scan	126	126		Harris
P5500 Scan	18	18		Harris
Portable Equipment Total	5044	1132	3	
Mobile Units				
MDX	31	-	31	Sprint
RANGR/Trunk	1662	-	1662	Sprint
M7100	301	308*		Harris
M5300	2	2		Harris
M7300	29	29		Harris
Orion	370		370	Sprint
EDACS 500M	78		78	Sprint
Mobile Units Total	2480	339	2141	
Control Station Units				
Orion	7	-	7	Sprint
EDACS 500M	17	-	17	Sprint
M7100	22	22*		Harris
M7300	1	1		Harris
MDX	6	-	6	Sprint
FMD	11	-	11	Sprint
RANGR	153	-	153	Sprint
Control Station Units Total	217	23	194	

*Some or all of the terminals may not be P25 Phase 1 trunking capable. See Figure 7. The baseline assumption is P7100, P5100, and M7100 terminals can be upgraded and replacements are not included in the pricing. The County may purchase new, P25 trunked-compatible terminals to replace any P7100, P5100, and M7100 radios that are incompatible with P25 Phase 1 trunked.

2.3 P25 Implementation Process

The transition processes are summarized above in Figure 4 – Project Process Overview. In general, the transition plan consists of the following major steps:

1. Decommission 10 of the 20 County-wide simulcast channels to make temporary space available at the sites.
2. Remove identified equipment at pre-determined sites and replace with new, P25 equipment operating on the new frequencies. The new P25 equipment will operate in parallel with the remaining EDACS equipment at the maximum capacity possible, increasing to full P25 Phase 1 capacity at cutover.
3. Replace non-P25-compatible radios with new Sprint-provided radios.
4. Upgrade all 7100, 5100, 7300, 5400, and 5500 series radios with P25 Phase 1 software. Because of the limited processing and memory capacities of older P7100 and P5100 series radios, the following radio models support P25 Conventional operation only, not P25 Phase 1 Trunking. Harris assumes that all existing, County P7100 and P5100 series radios are not of the vintage in Figure 7.

Figure 7. P25 Conventional Only Portable Radios

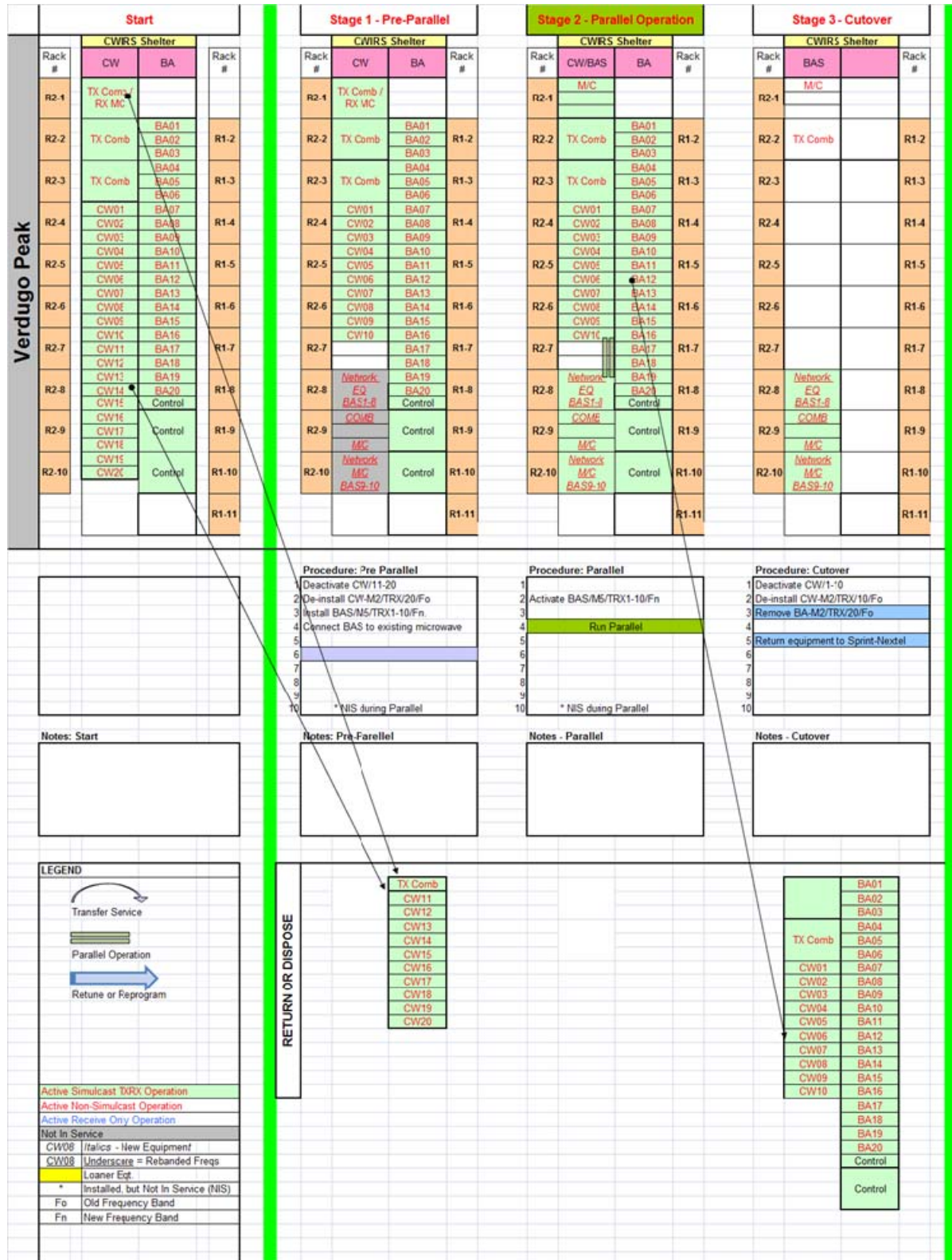
Model	Radio
RU101219V31	P7100 Scan
RU101219V32	P7100 System
RU101219V33	P7100 Select
RU101219V131	P5100 Scan
RU101219V132	P5100 System
RU101219V133	P5100 Select

5. Install new antenna systems at CWIRS sites as appropriate
6. Install and commission P25 site equipment

2.3.1 Transition Plan Example

A complete, detailed description of the proposed site transition plan is included as Attachment A. Figure 8 is an extract from the complete plan showing the transition steps in spreadsheet form for Verdugo Peak. Each site varies according to the specific requirements of the sites. However, this example demonstrates well the approaches used, and the transition phases applicable to all sites.

Figure 8. Verdugo Peak Transition Procedure



3. Project Implementation

3.1 Project Team

Harris will assemble a team of experienced and dedicated individuals to implement the radio system. The responsibilities for the team members are defined herein.

3.1.1 Project Manager

The project manager's primary responsibility is to manage all phases of the project from the beginning through acceptance ensuring successful implementation, integration, optimization and acceptance of the project. The project manager will be responsible for ensuring that material and equipment are ordered and shipped, services are coordinated in support of the project schedule, the progress and quality of work to be performed, managing overall project cost, and processing any contract changes. All official communications regarding the project will be held between the project manager and the County's project manager.

3.1.2 Site Manager

The Site Manager will serve as the Project Managers on scene representative responsible for the day to day supervision of crews performing work in support of the project. His responsibilities will also include the planning and scheduling of radio programmer/installation resources and subscriber availability.

3.1.3 Project System Engineer

The system engineer will have full technical responsibility for the design and technical implementation of the proposed system design. The system engineer will be responsible for integrating standard Harris products as well as vendor products (agreed to in the system purchase contract) into a complete operational system. The system engineer will participate in all detailed design review meetings, provide technical support to the Harris project manager, oversee the System Acceptance Test Plan as defined by the contract, direct the system optimization process and other tests to ensure that all system parameters are correct and fully meet the technical and contractual requirements. In addition, the system engineer will provide technical support to Harris' Technical Publications department for provision of as-built drawings and other technical documentation deliverables.

3.1.4 Harris' Regional Service Center

The regional service center manager will have responsibility for the teams supporting installation, implementation and warranty support. Where appropriate, Harris authorized service center subcontractors will be used to assure the highest quality of workmanship and timely execution of the project. The manager will work with the project manager to have installers and technicians on-site when needed and provide technicians to participate in the Acceptance Test Plan. The manager will be responsible for Harris' warranty and maintenance activities, as well as subsequent system maintenance if procured by the customer. The manager will be the customer's primary point of contact and will handle all official communications regarding system support.

3.1.5 Training Manager

The training manager will implement and manage Harris' proven, systematic approach to training. The manager will establish a training plan that identifies the appropriate training courses required for the operation, management, and maintenance of the new communications system including infrastructure, subscriber terminals, and consoles. The training manager will recommend the appropriate personnel for each course and establish a schedule that optimizes the value of these training courses. The manager will also ensure that experienced trainers are provided and that training materials are distributed to deliver an outstanding training program to personnel and agencies.

3.2 Schedule

Harris has provided a preliminary project schedule as Attachment B in the form of a Microsoft Project® Gantt chart. The preliminary high level schedule shows the timeframes of the various project steps.

During the Detailed Design Review, Harris will develop a more detailed project schedule that will meet the TA's Rebanding time line and efficiently allow for the Rebanding process with minimal impact on current operations. The more detailed schedule will take into account the results of site surveys, list each major milestone, and define each party's responsibility so that the reader can quickly understand the timing and required inter-relationships. The detailed schedule will also incorporate the feedback given by the customer during the initial project meetings. Throughout the project, Harris' project manager will review project progress as compared to the schedule. In order to maintain the project schedule, he will take necessary actions to work around issues and bring focus to problems (actual & potential). Harris' project manager will coordinate with the County, scheduling the work in order to minimize disruptions to current operations. Monthly project updates will be provided to the customer.

3.3 Project Responsibilities

Figure 9 describes the general project responsibilities of both parties to perform which are not specifically associated with any one site location.

Figure 9. General Requirements Responsibility Matrix

Tasks	Harris	County	Comments
Designate a Harris project manager	X		
Designate a County project manager		X	
Manage the Harris team	X		
Establish project communications protocol, maintain communications log as required	X		
Conduct internal weekly project review meetings, submit weekly status reports	X		
Conduct weekly project update calls	X		
Participate in weekly project update calls		X	
Conduct monthly project reviews	X		

Tasks	Harris	County	Comments
Participate in monthly project reviews		X	
Report project progress as compared to project schedule	X		
Update project schedule monthly	X		
Manage and control the flow of products and equipment from the factory to meet the project schedule	X		
Review change orders with customer, complete the change request form, update change register	X		
Review change orders with Harris project manager, provide approval		X	
Monitor and manage risks using the Harris Risk Management Plan	X		
Review and approve submitted design documents or respond with revisions within the time period specified in the contract		X	
Provide written approval for major milestones such as DDR, Staging, FTP and Final Acceptance		X	
Provide timely responses to issues and questions		X	
Coordinate with other state and local government agencies, as required		X	
Designate system administrators		X	
Provide access to all buildings and sites, including temporary ID badges for Harris team as necessary		X	
Provide parking permits for Harris team for any restricted parking areas		X	
Provide adequate road access for delivery vehicles		X	
Arrange for temporary parking to off load equipment at all buildings and sites		X	
Clean up site, remove all debris and un-wanted material associated with infrastructure replacement	X		
Remove any pre-existing customer owned or pre-existing hazardous material found on site		X	
Responsible for decommissioning any equipment located at sites not utilized by the new P25 design.		X	

3.4 Design Reviews

3.4.1 Kick-off Meeting & Preliminary Design Review

The Harris project manager will initiate the project with a project kick-off meeting followed by a Preliminary Design Review. The timing of these meetings will be mutually agreed upon by Harris and the County. The objectives of the meeting include:

- Introduction of all project participants
- Review of the roles of the project participants
- Review of the overall project scope and objectives
- Review of the current site status
- Review of the current frequency plan
- Review the preliminary schedule
- Schedule site surveys with customer and each site's knowledgeable persons

3.4.1.1 Grounding Analysis

The exterior ground system typically consists of multiple grounding electrodes bonded together with conductors to form a single reference to earth ground for the site. The location of the grounding electrodes with respect to the various site components such as the tower, equipment shelter, and RF cable entry port are important in maintaining the integrity of the grounding system and providing a non-destructive, low impedance path to ground for lightning strikes and currents.

Harris' grounding system design goal for every site is a measurable ten (10) ohms or less resistance between any connected point on the ground bus and earth ground. In the event these conditions do not exist, or reasonable resistance cannot be obtained, Harris will work with the County to recommend the most cost-effective grounding solution possible for that site.

The County will conduct as part of the Preliminary Design Review, an on-site grounding evaluation of the existing ground conditions.

The components assessed for the exterior site ground shall consist of viewing and/or inspecting the following:

- Connections to the Grounding System, i.e. Bonding Jumpers
- Site's Ground Ring
- Tower Ground Ring
- Tower Ground to the Ring
- Fence Grounding
- Grounding Electrodes
- Equipment Shelter Ground Ring
- Generator and Fuel Tank Grounds
- Ice Bridge Ground
- RF Entry Port Ground

The interior Master Ground Bar (MGB) is the only point where any interior equipment grounds or metallic objects should connect with the site's exterior ground system. All equipment grounds, non-RF surge suppression grounds, AC equipment ground, DC power plant grounds, ancillary support

equipment grounds and all interior extraneous metallic object grounds should be routed to the MGB. The MGB is the earth ground reference for all interior shelter components.

The components assessed for the interior site ground will consist of viewing and/or inspecting the following:

- MGB Ground
- Neutral-Ground Bond
- AC Utility Entrance Ground
- Automatic Transfer Switch Ground
- Load Breaker Panel Ground
- Door Ground
- Air conditioner Vent Cover Ground
- Exhaust Fan Ground
- Battery Rack Ground
- DC Distribution System Ground
- Equipment Cabinets Ground
- UPS or Inverter Ground
- Telco Ground
- Punch-block Ground

Following the survey, the County shall submit a report to Harris summarizing results of the tests and grounding data including recommended grounding system repairs. The County shall utilize the specifications and requirements provided in the Harris procedure "Site Grounding and Lightning Protection" AE/LZT 123 4618/1 as guidance to the expected quality of the County-furnished ground systems.

3.4.2 Detailed Design Review

The Harris team will assemble the information obtained during the kickoff meeting and Preliminary Design Review along with the information derived during the site surveys with the customer. The information along with the design effort for the proposal will be used to develop the documentation for the Detailed Design Review. The Harris team will present design drawings and documents and review the system design with the customer at a mutually agreed location.

Figure 10. Design Reviews Responsibility Matrix

Tasks	Harris	County	Comments
Kickoff Meeting & Preliminary Design Review			
Assemble project team and travel to the customer location	X		
Present preliminary information on sites and design	X		

Tasks	Harris	County	Comments
Provide a team and propose a schedule for site surveys	X		
Arrange access to sites and confirm site survey schedule		X	
Assemble customer team for kickoff meeting		X	
Provide location in appropriate conference room or training facility		X	
Provide information and status on sites, frequencies, leases etc.		X	
Provide site knowledgeable person to accompany Harris on site surveys		X	
Prepare for Detailed Design Review			
Conduct Site Surveys, provide report and recommendations	X		
Develop required drawings	X		
Develop network plans	X		
Develop tower antenna placement plans	X		
Develop frequency plans	X		
Develop coverage maps	X		
Develop site electrical loads	X		
Develop preliminary cutover plan	X		
Develop formal project schedule	X		
Prepare Acceptance Test Procedure (ATP) documents	X		
Perform Grounding Analyses		X	
Provide site plans and applicable electrical and layout plans		X	
Provide answers to Harris questions		X	
Arrange for site lease for any non-customer owned sites		X	
Detailed Design Review			
System block diagrams	X		
List of deliverable equipment for each site	X		
Network connection plan and microwave capacity requirements	X		
Tower antenna placement drawings	X		
Antenna system drawings	X		
Coverage prediction maps	X		
Frequency plans	X		
Combiner plans	X		
Shelter floor plan drawings	X		

Tasks	Harris	County	Comments
Rack elevation drawings	X		
AC/DC power and BTU loads	X		
Review preliminary cutover plan	X		
Review Acceptance Test Plans	X		
Project schedule	X		
Provide appropriate personnel to review documents		X	
Provide location for DDR meeting		X	
Approve the design following DDR meeting		X	
Prepare and file FCC license applications		X	

3.4.3 Microwave

The County shall be responsible for providing the necessary microwave backhaul at each RF and network site on the new P25 system to support the P25 network. Harris will address specific microwave requirements and bandwidth allocations with the County during the Detailed Design Review. However, the specifications and requirements provided in Attachment E shall guide the County as to the expected quality, operational, and reliability parameters of the County-furnished T1 circuits.

Figure 11. P25 Trunked Network Bandwidth Requirements

Existing capacity for EDACS is required during parallel operations

Site	Minimum Microwave Capacity Required for P25 Phase 1
Oat Mtn	1 DS-1
Mt. Lukens	1 DS-1
Verdugo Peak	1 DS-1
Criminal Courts	1 DS-1
Castro Peak	1 DS-1
Rolling Hills Transmit	1 DS-1
Puente Hills Nike	1 DS-1
Johnstone Peak	1 DS-1
San Dimas	1 DS-1
Rio Hondo	1 DS-1
Tejon Peak	1 DS-1
Burnt Peak	½ x DS1
Bald Mtn	½ x DS1
Whitaker Middle Peak	½ x DS1

Hauser Peak	½ x DS1
Lower Blue Ridge	½ x DS1
Blue Rock	½ x DS1
Black Jack Mtn	½ x DS1

Should network administrators desire to perform maintenance or monitoring on the remote sites, the VIDA network requires approximately one DS-0 per site for maintenance purposes. Harris has included this bandwidth in the bandwidth allocations shown above in Figure 11.

Should the sites lose connectivity with the Network Switching Servers due to external factors, the Harris trunked site equipment will go into local Enhanced Failsoft with Security (EFS) mode during these communication disruptions. The system will continue local trunking during backhaul losses, will not resort to conventional mode, will maintain user authentication, and can maintain encrypted communications. Harris' EFS operation mode allows users on the site to continue local radio communications without changing operational modes.

3.4.4 Site Preparation

After final Detailed Design Review approval, the County shall complete the required site preparation activities in accordance with the mutually agreed-to project schedule resulting from the Detailed Design Review.

Site preparation activities and responsibilities are detailed in the Site Preparation Responsibility Matrix contained within this Statement of Work.

3.4.4.1 Site Preparation Responsibilities

Figure 12. Site Preparation Responsibility Matrix

Tasks	Harris	County	Comments
Provide adequate rack space and work space for installation of Harris equipment.		X	
Provide adequate shelter/equipment room electrical power, single point ground system, cable entry ports, HVAC and back-up generator power.		X	
Provide all DC plants required to power the RF site equipment		X	
Provide protected AC power (120V AC UPS) at Eastern Avenue for network switching, management, and control point equipment, which is part of the replacement P25 system. Provide two (2) dedicated 20-amp AC circuits (breakers, wiring, conduit, receptacles, etc.) at each equipment rack or cabinet.		X	
Provide protected AC power (120V AC UPS) at each console location.		X	
Install new LMR antenna(s) using appropriate 6' side arms and mounting hardware		X	
Install new Tower Top Amplifiers		X	
Install antenna coax, connectors and jumpers using cable clamps to		X	

Tasks	Harris	County	Comments
properly secure cable to cable ladder(s), add grounding kits at the top, bottom and on ice bridge			
Tag and identify each new antenna line		X	
Sweep test each new antenna line, provide copies for site as built drawings		X	
Provide space at the dispatch centers and network centers for new system equipment		X	

3.4.5 Site Power and Cooling Requirements

This section summarizes the site facility requirements for each system proposed and identified in Figure 17. Power requirements and BTU loading provided in 0 Site Power and BTU Summary

Figure 13. Site Power and BTU Summary

Site Name	Maximum Power	Maximum BTU Load
Oat Mountain 10-ch RF Simulcast Site	154 Amps @ 48 VDC	24,175
Mount Lukens 10-ch RF Simulcast Site	154 Amps @ 48 VDC	24,175
Verdugo Peak 10-ch RF Simulcast Site	154 Amps @ 48 VDC	24,175
Criminal Courts 10-ch RF Simulcast Site	154 Amps @ 48 VDC	24,175
Rolling Hills Transit 10-ch RF Simulcast Site	154 Amps @ 48 VDC	24,175
Castro Peak 10-ch RF Simulcast Site	154 Amps @ 48 VDC	24,175
Burnt Peak 5-ch RF Simulcast Site	82 Amps @ 48 VDC	12,900
Bald Mountain 5-ch RF Simulcast Site	82 Amps @ 48 VDC	12,900
Tejon Peak 5-ch RF Simulcast Site	82 Amps @ 48 VDC	12,900
San Dimas 8-ch RF Simulcast Site	125 Amps @ 48 VDC	19,560
Rio Hondo 8-ch RF Simulcast Site	125 Amps @ 48 VDC	19,560
Puente Hills Nike 8-ch RF Simulcast Site	125 Amps @ 48 VDC	19,560
Johnstone Peak 8-ch RF Simulcast Site	125 Amps @ 48 VDC	19,560
Hauser Peak 6-ch RF Multisite Site	97 Amps @ 48 VDC	15,175
Blue Rock 5-ch RF Multisite Site	82 Amps @ 48 VDC	12,955
Blackjack Mountain 5-ch RF Multisite Site	82 Amps @ 48 VDC	12,955
Lower Blue Ridge 5-ch RF Multisite Site	82 Amps @ 48 VDC	12,955
Whitaker Middle Peak 5-ch RF Multisite Site	82 Amps @ 48 VDC	12,955
IP Simulcast Control Point (each)	10 Amps @ 120 VAC	4,045

Site Name	Maximum Power	Maximum BTU Load
C3 MaestroIP Consoles (each)	5 Amps @ 120 VAC	2,080

3.4.6 Antenna System Design

The antenna system designs are provided in Figure 14. Antennas and cable as specified below will be provided by Harris, installation will be performed by the County.

Figure 14. Antenna System Details by Site

Site Name	Antenna System Details	
	Qty	Model / Cable / Height AGL
OAT Mountain 10-ch RF Site	2	APL868010 Tx using 1-5/8" @ 100'
	1	APL868010 Rx using 7/8" @ 140'
	1	429-83H-01 TTA @ 140'
Mount Lukens 10-ch RF Site	2	DS7A06F36U3N Tx using 1-5/8" @ 100'
	1	DS7A06F36U3N Rx using 7/8" @ 130'
	1	429-83H-01 TTA @ 130'
Verdugo Peak 10-ch RF Site	2	DS7A06F36U3N Tx using 7/8" @ 120'
	1	DS7A06F36U3N Rx using 7/8" @ 150'
	1	429-83H-01 TTA @ 150'
Criminal Courts 10-ch RF Site (Rooftop Site with 100' estimated cable run)	2	SE414-SF3PALDF(D04)_R105 Tx using 7/8" @ 250'
	1	SE414-SF3PALDF(D04)_R105 Rx using 7/8" @ 250'
	1	429-83H-01 TTA @ 250'
Rolling Hills Transit 10-ch RF Site	2	APL868012 Tx using 1-5/8" @ 100'
	1	APL868012 Rx using 7/8" @ 130'
	1	429-83H-01 TTA @ 130'
Castro Peak 10-ch RF Site	2	APL868012 Tx using 7/8" @ 100'
	1	APL868012 Rx using 7/8" @ 140'
	1	429-83H-01 TTA @ 140'
Burnt Peak 5-ch RF Site	1	APL868010 Tx using 1-5/8" @ 100'
	1	APL868010 Rx using 7/8" @ 120'
	1	429-83H-01 TTA @ 120'
Bald Mountain 5-ch RF Site	1	SE414-SF1PALDF R60 Tx using 1-5/8" @ 100'
	1	SE414-SF1PALDF R60 Rx using 7/8" @ 120'
	1	429-83H-01 TTA @ 120'
Tejon Peak 5-ch RF Site	1	SE414-SF3PALDF_A=60 Tx using 1-5/8" @ 40'
	1	SE414-SF3PALDF_A=60 Rx using 7/8" @ 90'
	1	429-83H-01 TTA @ 90'

Site Name	Antenna System Details	
	Qty	Model / Cable / Height AGL
San Dimas 8-ch RF Site	2	101-83B-09-0-03N Tx using 1-5/8" @ 80'
	1	101-83B-09-0-03N Rx using 1-5/8" @ 60'
	1	429-83H-01 TTA @ 60'
Rio Hondo Rx 8-ch RF Site	2	APL868012 Tx using 1-5/8" @ 100'
	1	APL868012 Rx using 7/8" @120'
	1	429-83H-01 TTA @ 120'
Puente Hills Nike 8-ch RF Site	2	APL868012 Tx using 1-5/8" @ 100'
	1	APL868012 Rx using 7/8" @130'
	1	429-83H-01 TTA @ 130'
Johnstone Peak 8-ch RF Site	2	APL866513-xxT6 Tx using 7/8" @ 100'
	1	APL866513-xxT6 Rx using 7/8" @140'
	1	429-83H-01 TTA @ 140'
Hauser Peak 6-ch RF Site	2	DS7A06F36U3N Tx using 1-5/8" @ 100'
	1	DS7A06F36U3N Rx using 7/8" @ 140'
	1	429-83H-01 TTA @ 140'
Blue Rock 5-ch RF Site	1	101-83B-09-0-03N Tx using 1-5/8" @ 70'
	1	101-83B-09-0-03N Rx using 1-5/8" @100'
	1	429-83H-01 TTA @ 100'
Blackjack Mountain 5-ch RF Site	1	SE414-SF3PALDF(D06)_R90 using 7/8" coax @ 50'
Lower Blue Ridge 5-ch RF Site	1	APL869014-xxT6 Tx using 1-5/8" @ 100'
	1	APL869014-xxT6 Rx using 7/8" @120'
	1	429-83H-01 TTA @ 120'
Whitaker Middle Peak 5-ch RF Site	1	SE414-SF3PALDF_A=130_0746 Tx using 7/8" @ 60'
	1	SE414-SF3PALDF_A=130_0746 Rx using 7/8" @100'
	1	429-83H-01 TTA @ 100'

3.4.7 Manufacturing & Staging

Following the final design approval, Harris will proceed to order equipment using Harris' enterprise resource planning system for procurement of material and to schedule manufacturing. Orders will be placed with the Harris factory to manufacture the RF equipment, and vendor/subcontractor items will be ordered as well. Factory specifications will define the test for each individual rack of equipment.

After manufacturing and test, the equipment will be assembled in Harris' factory staging facility by system engineers and technicians. Harris personnel will make all intra-rack connections for each site's equipment. Ethernet or T1 cable connections will simulate transmission networks and ensure the equipment is connected to the network switches. Since the Network Switching Center and two Simulcast Control Points have previously been purchased by the County and already delivered, the Harris factory staging facility will simulate full P25 network operation as follows:



- Harris will provide a temporary Network Switching Center for the duration of staging the County's RF sites.
- Harris will share and rotate the two newly manufactured Simulcast Control Points among the four simulcast subsystems.

Technicians will set the IP addresses and verify operation of the network and radio system. A test user database will be entered into the system and test radios will be programmed to function on the system. Several consoles will be set up to demonstrate dispatch operation. System levels and all features will be verified to signify the system is ready for shipment.

3.4.8 Shipping and Storage

At the end of staging, the equipment will be prepared for delivery to the sites. Each rack is wrapped in a clear plastic wrap and well-secured to ensure safe transportation. The equipment is placed onto the truck so that easy unloading is possible.

Harris will provide storage for all P25 infrastructure equipment between the time of delivery and transportation to LA County site locations. At the warehouse facility rented by Harris for this effort, the equipment is inventoried and the material is collected for delivery to the installation sites.

Once subscriber radios and their associated accessories are ordered by the County or Sprint-Nextel, they too will be shipped and delivered to the warehouse facility. Harris will verify that radios and accessories received match the shipping manifests, purchase orders, and task orders covering the equipment. Harris will deploy radios to the County subscribers in accordance with the overall Harris project management schedule. Harris will also provide storage for Sprint-Nextel equipment furnished to accomplish reconfiguration of conventional (small cell) and mutual aid systems. Harris will release this equipment to the County in accordance with the overall Harris project management schedule identifying the County small cell and mutual aid installation work.

Figure 15. Manufacturing & Staging Responsibility Matrix

Tasks	Harris	County	Comments
Insert equipment delivery dates into the enterprise resource planning system	X		
Place orders with the Harris factory	X		
Place orders with key suppliers	X		
Place orders for vendor items	X		
Manufacture all infrastructure equipment	X		
Assemble equipment in staging area on a per site basis	X		
Provide appropriate personnel to observe the staging (Optional)		X	
Break down equipment, ship to County	X		
Provide temporary storage near customer location	X		
Inventory equipment	X		Customer witness

Tasks	Harris	County	Comments
Validate Harris Equipment Inventory		X	
Collect all equipment on a per site basis, ready for the installation teams.	X		

Figure 16. Harris Staging Facility



3.4.9 System Installation

The Harris installation team will install the new equipment at the locations disclosed in the system design and integrate the proposed subsystems as described in the “System Description” to provide an end-to-end network solution.

Subsystems to be furnished, installed, and integrated by Harris are:

- Qty (1) 10-channel P25 Phase 1 Trunked Simulcast system (less Control Point)
- Qty (1) 10-channel P25 Phase 1 Trunked Simulcast system (with Control Point)
- Qty (1) 8-channel P25 Phase 1 Trunked Simulcast system (with Control Point)
- Qty (1) 5-channel P25 Phase 1 Trunked Simulcast system (less Control Point)
- Qty (4) 5-channel P25 Phase 1 Trunked Multisite systems
- Qty (1) 6-channel P25 Phase 1 Trunked Multisite system
- Qty (12) Dispatch consoles

These subsystems will be integrated with County-furnished equipment as follows:

- Network Switching Center including High Availability Network Switching Servers, Regional VIDA Manager, Active Directory Server, and Regional Site Manager Pros
- 10-channel Simulcast Control Point

- 5-channel Simulcast Control Point
- EDACS IP Gateway
- Inter-Subsystem Interface (ISSI)
- Interoperability Gateways (24 Talk-Paths)
- IP Logging Recorder

Harris' first installation priority will be to work with the County to coordinate installation of the simulcast control points and dispatch consoles that require early installation. Harris will establish a site installation plan that prioritizes RF site installations, with proper consideration given to the following:

- Site development status
- Grouping of sites by region
- Site accessibility
- Interoperability between the current EDACS and the new P25 Systems
- Critical events, including the County's rebanding schedule

The installation plans will be developed during the "detailed design phase" of the project and presented to the County for review and approval. The installation plans will be based on site surveys conducted by Harris personnel or its subcontractors and will include floor plan drawings, equipment rack up drawings, antenna location details, grounding standards, installation and commissioning procedures. The installation plan will coordinate all activities of the County, and Harris' personnel and our subcontractors, minimizing construction conflicts and ensuring that system implementation proceeds efficiently. Since operational communications equipment currently coexists with the installation of the new P25 equipment, Harris will take great care to ensure that there is minimum disruption in service. Any required outage of an operating facility will be coordinated in advance with the County.

Harris will provide the County with a detailed listing of all Harris-furnished equipment delivered to the sites of installation, including model numbers, serial numbers, equipment locations, firmware and software versions, and installation date. Subscriber terminals will be delivered with an accurate electronic listing of the equipment provided.

The Harris Team will work closely with the County personnel during the installation planning phase of the project. Harris project managers and system engineers will conduct periodic face-to-face meetings and conference calls to coordinate site availability and implementation processes. As site and user equipment are delivered, the inventory database will be updated and provided to the County.

Harris and its subcontractors will provide the installation and commissioning activities to ensure the P25 system project is professionally implemented in accordance with Harris' implementation schedule and the needs of the County's stakeholders.

Harris' industry accepted LBI-39185B "Tower Requirements and General Specifications" and LBI-AE/LZT 123 4618/1, REV D "Site Grounding and Lightning Protection" installation specifications and standards will be used in the implementation of the radio system infrastructure. All Harris

personnel and subcontractors assigned to the County project will be trained in accordance with these specifications and standards manuals. The Harris project team and quality control personnel will periodically review the installation work to ensure that the standards are being implemented.

Installation and commissioning activities are organized into three sections: infrastructure equipment, tower work, and user equipment.

3.4.10 Fixed Equipment Installation

Harris will be responsible for the installation of all fixed equipment contained in the following detailed description of work as approved during the Detailed Design Review. Installation will be scheduled in conjunction with the delivery of equipment after staging and the completion of site preparation work by the County required at each site. All equipment will be installed in a neat and professional manner, employing a standard of workmanship consistent with Harris' installation standards and in compliance with applicable National Electrical Code (NEC), EIA, Federal Aviation Administration (FAA), and FCC standards and regulations.

Figure 17 lists the systems to be installed as part of this Statement of Work:

Figure 17. Major System Components

Site Name	Site Purpose
Eastern Avenue	Basin P25 ^{IP} Simulcast Control Point East Zone P25 ^{IP} Simulcast Control Point (12) C3 Maestro ^{IP} Consoles
Basin P25 Simulcast - Oat Mountain	10-channel P25 Phase 1 RF Site
Basin P25 Simulcast - Mount Lukens	10-channel P25 Phase 1 RF Site
Basin P25 Simulcast - Verdugo Peak	10-channel P25 Phase 1 RF Site
Basin P25 Simulcast - Criminal Courts	10-channel P25 Phase 1 RF Site
West P25 Simulcast - Rolling Hills Transit	10-channel P25 Phase 1 RF Site
West P25 Simulcast - Castro Peak	10-channel P25 Phase 1 RF Site
Northwest P25 Simulcast - Burnt Peak	5-channel P25 Phase 1 RF Site
Northwest P25 Simulcast - Bald Mountain	5-channel P25 Phase 1 RF Site
Northwest P25 Simulcast - Tejon Peak	5-channel P25 Phase 1 RF Site
East Zone P25 Simulcast - San Dimas	8-channel P25 Phase 1 RF Site
East Zone P25 Simulcast - Rio Hondo	8-channel P25 Phase 1 RF Site
East Zone P25 Simulcast - Puente Hills Nike	8-channel P25 Phase 1 RF Site
East Zone P25 Simulcast - Johnstone Peak	8-channel P25 Phase 1 RF Site
P25 Multisite - Hauser Peak	6-channel P25 Phase 1 RF Site
P25 Multisite - Blue Rock	5-channel P25 Phase 1 RF Site

Site Name	Site Purpose
P25 Multisite – Blackjack Mountain	5-channel P25 Phase 1 RF Site
P25 Multisite – Lower Blue Ridge	5-channel P25 Phase 1 RF Site
P25 Multisite – Whitaker Middle Peak	5-channel P25 Phase 1 RF Site

Harris will furnish all required cables including power, RF and control. Harris uses manufactured cables with molded connectors for the control and audio that plug into distribution panels avoiding the need for punch block connections. Each cable run will be secured with cable ties. Excess material will be folded back and neatly coiled. All cables will be labeled and included in the final as-built documentation package.

The County shall provide power backup in the form of 48V DC plants for RF sites and a UPS, bypass circuitry and distribution breaker panel at each simulcast control point and network switching center.

The MASTR V P25 Phase 1 trunked stations and associated equipment provided to the County will be mounted in 86-inch standard EIA 19-inch (extra deep) open frame racks. Harris assumes that the County provided shelters will accommodate the height of these open racks and allow them to be positioned so that 36 inches of free aisle space can be maintained. Open racks will be furnished for all RF sites and Simulcast Control Point equipment. The racks will be anchored to the equipment room floor, using at least four anchor points.

Harris will properly ground all cabinets, racks, enclosures, and transmission line surge protectors to the site's single point grounding system. Ground connections will be connected using approved irreversible compression connectors or irreversible lugs and splices. All painted surfaces where ground connections will be made will be scraped clean of paint and dissimilar metal connections will be treated with an anti-oxidant compound.

The physical installation of the RF equipment will be accomplished per an agreed upon infrastructure migration plan. As each site is completed, a commissioning team will properly align, configure, program, and conduct the installation checklist and test the equipment as prescribed in the equipment installation manuals. After completion of all sites, functional testing in accordance with the Functional Test Plan (FTP), Attachment C, and coverage characterization in accordance with the Coverage Characterization Test Plan (CCTP), Attachment D, will be conducted. County personnel and/or their representatives will be invited to participate in the testing process. The alignment and test data will be recorded and copies provided to the County.

3.4.11 Equipment Installation

Figure 18. System Installation Responsibility Matrix

Tasks	Harris	County	Comments
Provide all network connectivity (backhaul) to support the replacement P25 system, including RF sites and network switching, control point, and console locations		X	
Furnish and install all DC cabling between the Harris equipment and the County's DC distribution point of demarcation	X		

Tasks	Harris	County	Comments
Install P25 simulcast systems and P25 multisite systems, and integrate with Simulcast IP control points, network controllers, network management equipment and all dispatch consoles. Provision EDACS IP Gateway for use with P25 subsystem.	X		
Install antenna lightning protection devices on each run after it enters shelter via cable entry port; ground device to main ground bus bar	X		
Connect base stations to specified replacement combiners and verify optimal tuning for each new allocated frequency	X		
Perform reconfiguration/retuning of conventional (small cell) systems, mutual aid systems, and bi-directional amplifiers.		X	
Install C3 Maestro ^{IP} dispatch consoles	X		
Configure Existing Network Switching Center	X		
Configure 2 Existing IP Simulcast Control Points	X		
Install and Configure 2 New IP Simulcast Control Points	X		
Provide demarcation blocks for connection to existing legacy radios to be used in inter-op system		X	

3.4.12 Tower Work

The County shall install the antennas, coaxial cables, and RF connectors at the RF sites. As part of its installation, the County will provide side arm mounts, grounding kits, properly sized transmission line hangers to support the RF cables onto the side arms, tower, and ice bridges. The transmission line hangers shall be installed and properly spaced in accordance with the manufacturer's specifications. Care shall be taken to avoid damage to all transmission lines during the installation process. Adequate service and/or drip loops shall be installed, and proper strain relief measures will be taken at all cable interfaces and shelter entrances. The antenna installation crews shall properly tighten all RF connectors to the manufacturer's specifications and all outdoor connectors will be professionally wrapped and sealed from moisture. The coax cables shall be properly terminated, and connected to Harris-provided lightning protectors inside the shelters.

The County shall install antenna systems using Harris installation practices contained in Antenna Systems Maintenance Manual, LBI-38983, Rev G. The County shall provide the antenna mounting side arm kits, transmission line hoisting grips, grounding kits, and hangers. Harris will provide antennas, coaxial cable, and connectors.

After installation, the RF transmission lines and antennas shall be photographed and swept by the County with an Anritsu Site Master or equivalent cable testing device on the appropriate frequency band(s) to ensure proper performance. The baseline test data shall be recorded and provided to Harris along with the antenna photographs. A copy shall remain on site for future reference.

Upon completion of the tower work, the RF infrastructure equipment is installed and connected to the antenna systems.

3.4.13 User Equipment

CWIRS utilizes a variety of subscriber equipment, comprising approximately 7,741 portable radios, mobile radios and control stations. Figure 19 and Figure 20 are listings of the various types of subscriber radios, showing the County agencies and departments to which they are assigned. Specifically, it identifies which of the subscriber units can be retuned and upgraded to P25 Phase 1, and which units require replacement to be P25 Phase 1 compatible.

Figure 19. Terminal Retune/Replacement Matrix – Portable Radios

Departments	ACTIVE PORTABLES																								
Replacement Model >		Field Flash Upgrade	Field Flash Upgrade	Field Flash Upgrade	Field Flash Upgrade	Field Flash Upgrade	Field Flash Upgrade		P5150	P7170	P5450	P5150/P5450	P7170	P5150	P5150	P5150	P5150	P5450	P7150	P7170	P5150	P5150	P5150	P5150	P5150
Current Model >	2012 Total	P5400 SYS	P5400 SCAN	P5500 SCAN	P7300 SCAN	P5100P SCAN	P7100P SCAN	MRK II-Scan	MRK II-SYS	MRK-I	MRK II	Jag 700P SYS	Jag 700P SCAN	MTL	MPA TRUNKED	MPA	MPA-Set	MPA-Scan	MPA-Sys	LPE SCAN	LPE-50	LPE-200	300P	PCS	
AG Comm/Weights and Measures	189					104								23			3	16					21	15	7
Animal Care and Control	216						130					31		42				13							
Auditor Controller	6						6																		
Beaches and Harbor	45			18														24	3						
Board of Supervisors	48				16									19				8						5	
Cal Poly Pomona	3	3																							
Children and Family Services	53							50						3											
Children Medical Services	62						62																		
Community and Senior Citizen Services	65																						65		
Coroner	40						19	6						9				6							
District Attorney	244	0	0	0	0	0	114	0	0	40	0	0	0	82	0	0	0	0	0	8	0	0	0	0	0
Emergency Prep & Response	123					123																			
Fire - F & FW	2										2														
Fire Hlth Hazmat	34						34																		
Glendora Transportation	0																								
Health Services	118		1				92				2							23							
Mental Health	58		5				12				29											12			
Museum of Art	10																							10	
Museum of Natural History	35													20				5	10						
Office of Public Safety	449	0	0	0	0	0	7	10	0	0	117	0	0	9	0	0	0	305	0	0	0	0	0	0	1
Parks and Recreation	242		5			6	63	12						30				110	5		11				
Probation - JIB	106													105										1	
Probation - Main	315						42	29			21			160				63							
Public Health	272		25				49			7	23							76	1			89	2		
Public Library	39		1				3				9								5				21		
Public Social Services	157						30				24			32				6					65		
Public Works	461										197							264							
Red Cross	15																							15	
Regional Planning	1		1																						
Registrar Recorder	21						4						12	5											
Sanitation Districts - Solid and Water	528		83			51	1				95		15	40				10			30		197	6	
Sheriff	0																								
Temple City	0																								
State Parole	613					6							607												
ISD - Alterations and Improvements	41																		29	5			4	3	
ISD - Communication Systems Support	0																								
ISD - Custodial Services	10																	10							
ISD - Customer Assistance Division	2										1								1						
ISD - EOC Radios	93																93								
ISD - Fleet Services	2					2																			
ISD - LAN/WAN Operations	5										5														
ISD - Maintenance and Operations	49																	49							
ISD - Network Services Division	36		5								21	1						4	4				1		
ISD - Parking Services	25										22							3							
ISD - Radio Systems Division	110	3				6			4	57		2						31	4			1	2		
ISD - Telecom Branch Admin	1																		1						
ISD - Telecom Svcs Mgmt	3																	3							
ISD - Voice & Video	48										7							34	7						
ISD - Wide Support Division	49							4										23	8				14		
Totals	5044	6	126	18	16	286	680	111	0	51	663	1	636	579	0	0	96	1115	54	8	41	123	386	48	
		1132						1462						2450											
		Retained Radios Field Flash Upgrade						Sprint-provided Program / Replace						Sprint-provided Program / Replace											

Figure 20. Terminal Retune / Replacement Matrix –Mobile Radios and Control Stations by Agency

Departments	ACTIVE MOBILES									ACTIVE CONTROL STATIONS							
Replacement Model >		M7100	M7100	Field Flash Upgrade	Field Flash Upgrade	Field Flash Upgrade	M7100	M7100	M7100		M7100	M7100	Field Flash Upgrade	Field Flash Upgrade	M7100	M7100	M7100
Current Model >																	
	2012 TOTAL	Orion	500M	5300M	7300M	7100M	FMD	MDX	RANGR	2012 TOTAL	Orion	500M	7100M	7300M	FMD	RANGR	MDX
AG Comm/Weights and Measures	26	4	1					21		5						1	4
Animal Care and Control	0									9			2			7	
Auditor Controller	0									0							
Beaches and Harbor	105	31			22	33			19	1	1						
Board of Supervisors	0									0							
Cal Poly Pomona	0									0							
Children and Family Services	7								7	2						2	
Children Medical Services	0									0							
Community and Senior Citizen Services	0									0							
Coroner	46	10	10						26	1						1	
District Attorney	296	79	0	0	0	145	0	0	72	0	0	0	0	0	0	0	0
Emergency Prep & Response	6				4	2				10					9	1	
Fire - F & FW	3					3				2						2	
Fire Hlth Hazmat	0									6			6				
Glendora Transportation	12	1		1	1			9		1		1					
Health Services	30	8				2			20	15	1		3		1	10	
Mental Health	0									0							
Museum of Art	1							1		1						1	
Museum of Natural History	0									2						2	
Office of Public Safety	306	139	0	0	0	78	0	0	89	27	0	0	3	0	0	24	0
Parks and Recreation	35	31							4	5						5	
Probation - JIB	0									1						1	
Probation - Main	107	10				20			77	4						4	
Public Health	6					6				13	2		8	1		2	
Public Library	57	17		1		7			32	4	1					3	
Public Social Services	0									1					1		
Public Works	1081	6				8			1067	51						51	
Red Cross	5		3		2					0							
Regional Planning	0									0							
Registrar Recorder	0									0							
Sanitation Districts - Solid and Water	101	23	64						14	24		16				7	1
Sheriff	0									2						2	
Temple City	0									1	1						
State Parole	0									0							
ISD - Alterations and Improvements	8								8	0							
ISD - Communication Systems Support	0									0							
ISD - Custodial Services	0									1						1	
ISD - Customer Assistance Division	0									1	1						
ISD - EOC Radios	0									3						3	
ISD - Fleet Services	1					1				0							
ISD - LAN/WAN Operations	13								13	0							
ISD - Maintenance and Operations	81								81	5						5	
ISD - Network Services Division	2								2	0							
ISD - Parking Services	0									1						1	
ISD - Radio Systems Division	73	1				3			69	14						13	1
ISD - Telecom Branch Admin	0									0							
ISD - Telecom Svcs Mgmt	0									0							
ISD - Voice & Video	62								62	4						4	
ISD - Wide Support Division	10	10								0							
Totals	2480	370	78	2	29	308	0	31	1662	217	7	17	22	1	11	153	6
		448		339			1693				24		23		170		
		Sprint-provided Program / Replace		Field Upgrade			Sprint-provided Program / Replace				Sprint-provided Program / Replace		Field Upgrade		Sprint-provided Program / Replace		

The P25 radio project requires replacement of certain subscriber radio equipment that cannot be upgraded to P25 Phase 1 digital operation. Such radios will be replaced by Sprint Nextel under the

County's rebanding agreement. Harris will provide P25 Phase 1 software upgrades for all Sprint-furnished EDACS radios. All replacement portables, mobiles and control stations will also contain software for EDACS operation.

Harris will furnish P25 Phase 1 software upgrades for County EDACS radios upgradeable to P25 but not replaced by Sprint-Nextel.

The County shall have the responsibility for development of radio personalities. Harris shall have responsibility for all P25 Phase 1 software upgrades, radio programming, and installation of mobile radios, vehicular charges, and control stations. The County will perform preventive maintenance for retained radios to be upgraded to P25 Phase 1, including:

- M7100^{IP} 800 MHz Mobile Radio Offset Channel Selectivity Optimization per MM-018799-001, latest revision
- P7100-P5100 Preventive Maintenance IF Centering Test Procedure per TSM34-14 dated April 27, 2012
- Installation of the most current radio operating flash code and DSP code for all retained radio models.

The County will perform its tasks within the time frame specified by the project schedule that is formalized by the design review process and updated as necessary during the course of the project.

Figure 21. User Equipment Responsibility Matrix

Tasks	Harris	County	Comments
Attend P25IP System Administration Training		X	
Attend P25IP Fleet Mapping Workshop Training		X	
Create Group Structure / Fleet Maps		X	
Develop, modify, and test radio personalities		X	
Verify radio personalities	X		
Coordinate with all user agencies to develop and manage schedules for radio equipment installation / programming	X		County support to include identification of agency representatives to be provided
Establish and communicate plan for departmental user migration to new P25 system.		X	
Provide replacement radio terminals for those that are non P25 Phase 1-capable, limited to the quantities stated in FRA Schedule D. For M7100 replacement radios perform, Offset Channel Selectivity Optimization in accordance with MM-018799-001RevA. For P5100 and P7100 replacement radios, perform IF centering alignment in accordance with IF Centering Test Procedure TSM34-14.	X		Radios provided by Sprint
Provide locations to remove / install and reprogram mobile and portable radios		X	

Tasks	Harris	County	Comments
Schedule subscriber users to deliver radios to equipment replacement / reprogramming locations	X		
Perform preventive maintenance, align retained radios, see Figures 19 and 20. For M7100 radios perform Offset Channel Selectivity Optimization in accordance with MM-018799-001RevA. For P5100 and P7100 radios, perform IF centering alignment in accordance with IF Centering Test Procedure TSM34-14.		X	
Perform upgrade to P25 Phase 1 with a software flash and re-program with P25 frequency sets, retained radios, see Figures 19 and 20.	X		
Program ~ 3,912 new portables with personalities	X		
Program with personalities and install ~2,141 new mobiles	X		
Perform preventive maintenance, align, ~23 existing Control Stations. For M7100 radios perform Offset Channel Selectivity Optimization in accordance with MM-018799-001RevA.		X	
Perform upgrade to P25 Phase 1 with a software flash and re-program with P25 frequency sets ~23 existing Control Stations	X		
Responsible for removing/installing and reprogramming all control station radios (~194)	X		
Install ~150 Vehicular Chargers	X		

3.4.14 System Optimization

Once all infrastructure equipment is installed, Harris' system engineer(s) will work with the on-site technicians to optimize the equipment in preparation for acceptance testing.

Figure 22. System Optimization Responsibility Matrix

Tasks	Harris	County	Comments
Prepare all installed sites for site inspections	X		
Verify microwave backhaul system is functional, and meets reliability spec	X		
Verify P25 system levels and parameters are set	X		
Verify P25 system alarm and system monitoring system is operational	X		
Verify system database is installed and operating correctly	X		
Verify proper dispatch operation	X		
Verify proper P25 system operation	X		

Tasks	Harris	County	Comments
Verify proper network switching operation	X		

4. Acceptance Testing and Coverage Characterization

The Harris system engineer will verify when the system installation and optimization is complete and ready for acceptance testing and coverage characterization and will notify the County. Installation and operation of the new P25 Phase 1 simulcast and multisite systems will be demonstrated through completion of the following test procedures. The tests fall into the following categories:

- **Site Inspections**
- **Functional Test Procedures:** designed to test all major features of the P25 system after sites have been installed and optimized.
- **Coverage Characterization Procedure:** defines how the RF coverage will be characterized including signal strength, Bit Error Rate and Voice Quality Testing. Coverage Characterization is performed for information only.

The Test Procedures are functional in nature and contain a short description, test methodology, and a record form for logging results and acceptance signatures for each test. Upon satisfactory completion of the functional test, the Harris program manager will present documentation for system acceptance to the County's project manager.

Figure 23. Acceptance Testing Responsibility Matrix

Tasks	Harris	County	Comments
Provide appropriate team members to participate in test, site inspections, functional test		X	
Inspect each RF site, noting discrepancies on the punch list	X		Customer witness
Inspect each dispatch center noting discrepancies on the punch list	X		Customer witness
Submit site inspection results	X		
Approve site inspection results		X	
Perform Functional Test Procedure FTP on P25 radio system and dispatch consoles	X		Customer witness
Submit Functional Test Procedure FTP results	X		
Approve Functional Test Procedure FTP results		X	
Provide team members to conduct coverage characterization	X		
Provide test vehicles for coverage characterization	X		
Provide testing equipment to record coverage characterization	X		
Perform coverage characterization tests including signal strength, Bit Error Rate and voice quality of P25 Phase 1 system	X		Customer Witness No coverage guarantees are provided; the Coverage Characterization Test is provided for information only.
Provide test radios for voice quality test		X	Selected at random out of

Tasks	Harris	County	Comments
			working inventory
Submit coverage characterization results	X		

5. Cutover

The Cutover Phase for the County's P25 radio system follows the "Parallel Phase" where the existing EDACS Countywide simulcast infrastructure has been reduced from 20 to 10 channels and new P25 infrastructure equipment installed and tested. During the Cutover Phase, the remaining legacy EDACS equipment will be removed in its entirety.

Figure 24. Cutover Responsibility Matrix

Tasks	Harris	County	Comments
Establish plan for departmental cutover to new system.		X	
Notify departments of cutover time.		X	
Provide warehouse for decommissioned EDACS equipment	X		
Decommission, remove and inventory EDACS equipment and dispose of per negotiated contract.	X		County to assist on shared equipment

6. Training

One of the key steps in implementing the system is developing a training plan for system administrators, technicians and users. System administrators shall be trained in radio group structure and fleet mapping in order to establish plans and radio profiles defining how each user radio is to be programmed. Each radio profile contains talkgroups for their work department, control head displays, alias displays, and other information that can be utilized by each user.

Radio user training plans and dispatcher training plans will be established. If the County will be performing any maintenance activities, then the designated maintenance personnel will also be trained during the planning phase of the project.

Harris will provide operator, administrator, and maintenance training in accordance with the training curriculum delineated within this statement of work.

6.1 Overview

Developing the knowledge and skills of Los Angeles County personnel who will operate, manage and maintain the upgraded radio system are critical elements to successfully migrate to a P25^{IP} radio system. To perform these tasks, high-quality, performance-based training that builds and enhances personnel competence is required. In addition, training enables Los Angeles County to optimally use the features and capabilities of P25^{IP} to meet and exceed communication requirements.

In order to provide high-quality, performance-based training, Harris' training courses are developed and maintained using a systematic approach. This methodology identifies what training should be provided for each job position and focuses on the performance of tasks. Training courses are then designed and developed with explicit learning objectives and appropriate content. Training effectiveness is evaluated and the results are used to maintain and improve Harris' training programs.

The systematic approach to training methodology also ensures that training is delivered in the most effective learning environment, such as a classroom or laboratory; a proper mixture of discussion, lecture, and hands-on training are used to provide for optimal learning. In addition, easy-to-follow student materials are created to support the training and appropriate technical documentation is provided.

Los Angeles County training will be delivered by Harris' technical training staff that is comprised of training professionals with extensive experience in both telecommunications and adult learning. Instructor certification ensures that each trainer possesses the instructional skills and technical competencies to deliver high-quality training to Harris' customers. Instructors are also evaluated regularly and participate in continuing instructor development programs to maintain and improve their technical and instructional knowledge and skills. Instructors are assigned to conduct customer training based on their areas of expertise.

The training program recommended for Los Angeles County is divided into the following categories:

- System Administrator Training
- Maintenance Technician Training
- End-User Operational Training (Options)

These three categories define the training for Los Angeles County personnel to distinct job classifications. Each category includes a description of the recommended training, the course length, and timing of course delivery in relation to project implementation.

6.2 System Administrator Training

System administrators have the overall responsibility for defining and maintaining the system's configurable parameters. The importance of this role has increased significantly as communication systems have become larger and more complex. The responsibilities include the following:

- Defining the fleet map and associated properties
- Planning radio feature usage and personalities
- Developing operating procedures
- Maintaining unit and group databases
- Generating reports
- Controlling radios (e.g., enabling and disabling units), and
- Monitoring system performance.

Harris recommends a series of training courses and workshops to prepare system administrators for their responsibilities. Each course and workshop will be delivered once on site, at a facility provided by the County. The maximum class size is 10 participants.

The following table summarizes the training program for system administrators and includes the course/workshop length, the number of sessions, and the total number of students:

Figure 25. System Administrator Training Summary

System Administrator Training	Length	Qty.	Total No. of Students
P25 ^{IP} System Administration Course	4½ days	1	10
P25 ^{IP} Fleet Mapping Workshop	3 days	1	10
Implementation Support Workshop	3 days	1	10
Unified Administration System Course	2 days	1	10
Regional Network Manager Course	2 days	1	10

Each participant will receive a hardcopy of the training presentations, associated hands-on exercises, and applicable technical documentation. The following are descriptions of each recommended course and workshop.

6.2.1 P25^{IP} System Administration Course

This course is designed for system administrators who will make decisions about the operation and configuration of the P25^{IP} radio system. Upon completion of the training, system administrators will be able to identify terminology, equipment, and components, and describe features and operational

processes associated with a P25^{IP} radio system. The topics covered include system operation, fleet mapping, radio programming, system database configuration options, and implementation processes.

This course should be attended during the installation phase of the project.

6.2.2 P25^{IP} Fleet Mapping Workshop

During this workshop, an instructor will work with the County to define the fleet map and plan radio personalities. Although the County can replicate the current talkgroup structure, configuration parameters (e.g., property classes, priority levels, etc.) associated with talkgroups and radio users, must be defined. These parameters are unique to the P25^{IP} radio system.

This workshop should be conducted shortly after system administrators attend the *P25^{IP} System Administration* course.

6.2.3 Implementation Support Workshop

Upon completion of the *P25^{IP} Fleet Mapping Workshop*, Harris' Technical Training Team will be available to remotely answer questions and provide feedback to the County project team who will be developing the fleet map and radio personalities. In addition, Harris will provide an instructor on-site to support the project team in finalizing plans and preparations for system implementation. This includes verifying the group structure is valid and meets operational requirements, and reviewing, revising, and testing the radio personalities developed for Harris portable and mobile radios. This workshop can also be used as a follow-up to the *P25^{IP} Fleet Mapping Workshop* if additional guidance and facilitation is required to develop the fleet map and radio personalities.

6.2.4 Unified Administration System Course

This course provides system administrators with the ability to create and maintain system databases using the Unified Administration System (UAS). This hands-on course requires an in-depth understanding of the job functions within the customer's organization as well as an operational understanding of the radio system. Therefore, completion of the *P25^{IP} System Administration* course is a prerequisite. Course topics include logging into the UAS, establishing user accounts, navigating through the user interface, creating and changing parameter values, adding/deleting radio users and talkgroups, and configuring interoperability gateways.

This course should be attended during the latter stages of the installation phase of the project or shortly after cutover.

6.2.5 Regional Network Manager Course

This course provides system administrators with the ability to monitor and manage the P25^{IP} communications system using the Regional Network Manager (RNM). Course topics include system access, monitoring the status of system equipment, identification and acknowledgement of system faults, historical views of system performance, exploring real-time viewers, and running activity and status reports on system performance.

This course should be attended during the latter stages of the installation phase of the project or shortly after cutover.

6.3 Maintenance Technician Training

Los Angeles County will require highly trained technicians in order to troubleshoot and perform maintenance on the P25^{IP} radio system. Formal classroom and hands-on instruction are recommended because it will provide technicians with the knowledge and skills needed to conduct preventative maintenance, troubleshoot problems, and take corrective action. The maintenance training program outlined is comprehensive, building from an introduction to the theory of operation, to an analysis of block diagrams and component interconnection, leading to training on advanced troubleshooting procedures.

Harris recommends a series of training courses, including one optional course, to prepare maintenance technicians to meet their responsibilities. Each course will be delivered once on site at a facility provided by the County. Maximum class size is 10 participants. The following table summarizes the training program for maintenance technicians and includes the course length, the number of sessions, and the total number of students:

Figure 26. Maintenance Technician Training Summary

Maintenance Technician Training	Length	Qty.	Total No. of Students
P25 ^{IP} System Maintenance Course	7 days	1	10
Regional Network Manager Course	2 days	1	10
Network Operation & Maintenance Course	4 days	1	10
MASTR V Station Maintenance Course	1½ days	1	10
P25 ^{IP} Simulcast System Maintenance Course	3 days	1	10
RF Maintenance Course	4 days	1	10
UAC-Based Interoperability Gateway Course (Optional)	2 days	1	10

Each maintenance technician will receive a hardcopy of the training presentations, associated hands-on exercises, and applicable technical documentation. Maintenance technician training is normally conducted during the latter portion of the warranty period. The following is a description of each of the recommended courses:

6.3.1 P25^{IP} System Maintenance Course

This course provides maintenance technicians with the basic knowledge and skills to operate and maintain a trunked P25^{IP} radio system. Course topics include an overview of P25^{IP} system operation, features, capabilities, and configurations, as well as basic radio programming. In addition, the function, configuration, and troubleshooting of system components (e.g., SitePro Controllers, Site Link, Miniature Mobility Exchange, Network Sentry, Regional Site Manager, and C3 Maestro^{IP} Dispatch Consoles) are included.

6.3.2 Regional Network Manager Course

This course provides maintenance technicians with the ability to monitor and troubleshoot the P25^{IP} radio system using the Regional Network Manager (RNM). Course topics include system access, monitoring the status of system equipment, identification and acknowledgement of system faults,

historical views of system performance, exploring real-time viewers, and running activity and status reports on system performance.

6.3.3 Network Operation & Maintenance Course

This course introduces maintenance technicians to basic networking concepts and provides them with the ability to maintain the IP network and Network Switching Center. Topics covered include IP addressing and basic routing, database backup and storage, router and switch configuration management, high-availability Network Switching Server configuration and failover operation, and disaster recovery of network components. Completion of the *Regional Network Manager* course is a prerequisite.

6.3.4 MASTR V Station Maintenance Course

This course covers the theory of operation and maintenance procedures for the MASTR V Station used in the P25^{IP} radio system. Topics covered include station architecture, module overview, software overview, network configuration, station configuration, troubleshooting and testing. Completion of the *P25^{IP} System Maintenance* and *Network Operation & Maintenance* courses are a prerequisite.

6.3.5 P25^{IP} Simulcast System Maintenance Course

This course provides maintenance technicians with the knowledge and skills to operate, maintain, and troubleshoot a P25^{IP} simulcast system. Topics include simulcast system operation and concepts, such as capture and non-capture zones and delay spread, signal flow, GPS timing synchronization and alignment, bypass operation, and system troubleshooting and replacement of failed components. Completion of the *P25^{IP} System Maintenance* and *MASTR V Station Maintenance* courses are a prerequisite.

6.3.6 RF Maintenance Course

This course provides maintenance technicians with the knowledge and skills to maintain the portable and mobile radios and control stations, which utilize Open Multimedia Application Platform (OMAP) microprocessors. Students will participate in classroom presentations and discussions on radio programming for testing as well as personality modification to meet specific needs. Disassembly of the radios will be demonstrated and discussed, and replaceable parts and service tools will be identified. Hands-on exercises include radio wiring installation, programming, testing, and software maintenance.

6.3.7 UAC-Based Interoperability Gateway Course (Optional)

This course is for maintenance technicians who need the knowledge and skills to install and/or maintain an Interoperability Gateway. Technicians learn how to configure a Universal Audio Card (UAC) to operate with legacy devices and the P25^{IP} radio system. This includes an overview of the types of interfaces supported by the UAC, setting up and programming the UAC, configuring the system for UAC operation using the Unified Administration System (UAS) and Regional Network Manager (RNM), and performing audio alignments.

6.4 End-User Operational Training (Options)

Harris emphasizes the importance of properly trained end users. A key benefit to Los Angeles County is that radio users and dispatchers are already familiar with the operation of Harris radios and the C3

Maestro Dispatch Console on the existing EDACS system. This will facilitate the transition to the upgraded P25^{IP} radio system. With a couple of exceptions, radio operation is very similar in EDACS and P25^{IP} modes. The new the C3 Maestro^{IP} Dispatch Console used in the P25^{IP} system uses the same graphical user interface as the C3 Maestro Dispatch Console used in EDACS, and a majority of dispatch functions (i.e., patch and simulselect operation) are identical.

Therefore, Harris offers Los Angeles County the option of using a web-based training program and/or instructor-led training for radio users and dispatchers on the operation of their respective communications equipment.

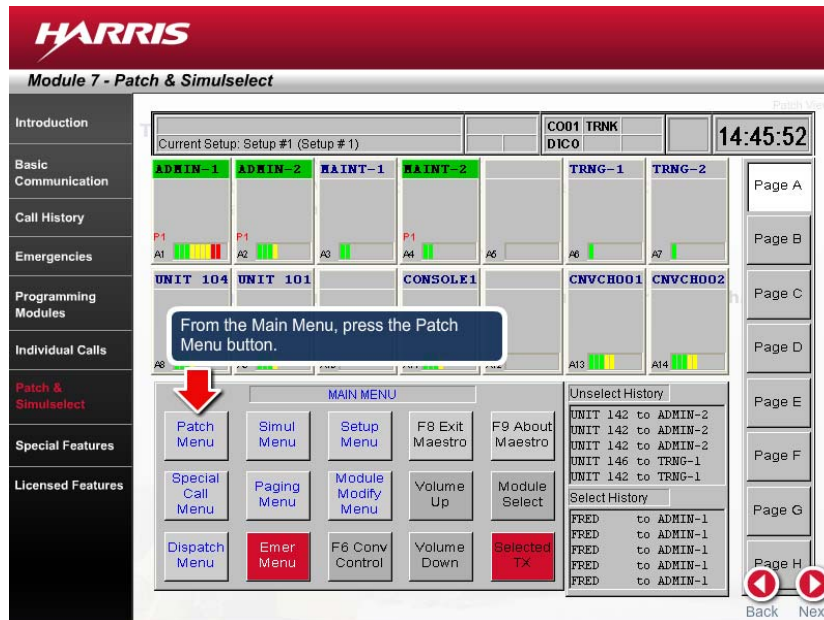
6.4.1 Web-Based Operational Training

Web-based training provides a mechanism to effectively deliver training radio users and dispatchers on the operation of radio and dispatch console equipment used in the system. Additionally, it can be used to augment training for new personnel due to turnover and facilitate the transition to new radios due to rebanding. Web-based training can build the end users' confidence by improving their knowledge of system operation and skills to operate their equipment, which will enhance performance and reduce the number of trouble reports.

Web-based training has numerous benefits including the following:

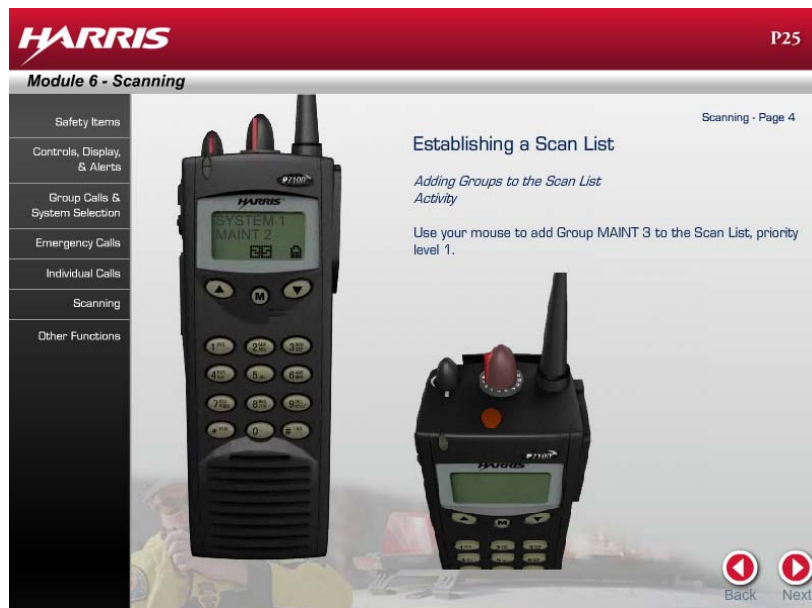
- Training can be accessed whenever it is needed (24 hours a day, seven days a week) from any location that has access to the Internet.
- Courses are self-paced, highly interactive, and developed utilizing animation and other multimedia tools to help keep students engaged, which increases retention.
- It is cost-effective, especially when student or instructor travel and living expenses associated with attending instructor-led training are considered.
- Training delivery is consistent and structured to ensure learning objectives are met.
- A test is administered at the end of each course to measure student achievement of learning objectives.
- A learning management system makes it easy to track student progress and generate reports.

Figure 27. Screen Capture from the C3 Maestro^{IP} Dispatch Console Operation Course



In order to register for a course, a student must have a computer with internet access and a unique e-mail address. After enrolling in the training, the student will have access to the course(s) for 30 days. This allows the student to review selected sections or the entire course multiple times to reinforce the learning. The seats must be utilized within one-year from the beginning of cutover.

Figure 28. Screen Capture from the C3 Maestro^{IP} Dispatch Console Operation Course



6.4.2 Radio Operator Train-the-Trainer Training

Los Angeles County may elect to use instructor-led training or a combination of instructor-led and web-based training to train end users on the operation of their Harris radios. If instructor-led training is selected, Harris will conduct this training for designated County instructors utilizing a train-the-trainer approach.

Harris is committed to providing model training and support materials for designated instructors to use during the implementation phase. Each training session on radio operation will be four hours in length and include the following topics:

- An overview of the County-Wide Integrated Radio System (CWIRS)
- A discussion on the differences between analog and digital voice
- A discussion on simulcast and multisite system operation
- A discussion of radio/system coverage expectations
- A demonstration of radio operation
- Hands-on practice with the radios

Harris recommends that instructors be selected from the departments that will use the radio system. The instructors need to be familiar with current operations and aware of any operational issues. Harris will provide customized presentation material for County instructors as well as soft copies of the training materials to allow for additional customization, if desired.

Harris will conduct 10 train-the-trainer sessions over five consecutive days. Each training session will be limited to 15 participants and conducted at a facility provided by the County. The training sessions will be scheduled approximately two-to-four weeks prior to the start of the performance period. This will allow time for the instructors to practice using the equipment as well as to hold training sessions for their “trainees.” Operating radios purchased by the County as part of the system will be used during the training.

6.4.3 Dispatcher Training

Dispatch personnel are at the core of effective and efficient implementation of a radio system. While the time required for training is minimal, the payback is immense. If the County elects to conduct instructor-led training, Harris recommends conducting the training directly to all dispatchers and their supervisors.

Dispatcher training sessions are either two or four hours in length depending upon the experience of the students. If the students are experienced in operating the C3 Maestro Dispatch Console on the existing EDACS system, then the training sessions will be two hours in length. This training will include a review of console operation and the differences between the C3 Maestro Dispatch Console used in EDACS and the C3 Maestro^{IP} Dispatch Console used in P25^{IP}. If the students have no experience operating the C3 Maestro Dispatch Console on the existing EDACS system, then the training sessions will be four hours in length and cover the following tasks:

- Pick and select communication modules
- Transmit and receive group and individual calls
- Transmit, receive and clear emergency calls

- Review call history
- Modify communication modules
- Create, modify and transmit on patches and simulselects
- Initiate and receive intercom calls
- Change console setups
- Use special and enhanced console features

On-site, instructor-led training sessions on the operation of the C3 Maestro^{IP} Dispatch Console will be conducted in the dispatch facility using the installed equipment. Any combination of two-hour and four-hour sessions can be conducted in a single day; however, the total training time cannot exceed eight hours of instruction. The training will be conducted with small groups of no more than two people on an operating console. This maximizes the effectiveness of the hands-on portion of the training.

6.5 Summary

The comprehensive training program recommended for Los Angeles County will involve personnel from various departments and at many levels. Harris envisions a program that builds the foundation for long-term excellence. Wide participation and in-depth instruction reflect Harris' commitment to delivering an outstanding training program.

7. Equipment Removal

After all users have been cutover over to the new P25 radio system, Harris will commence to decommission and remove the legacy EDACS systems from the County's sites in accordance with the Migration Plan. The decommissioned EDACS equipment will be transported to either the Harris provided warehouse for equipment requiring return to Sprint-Nextel, or to the County's warehouse for any equipment not requiring return to Sprint-Nextel.

Harris will also provide storage for the replaced subscriber radios pending return to Sprint-Nextel or other designated disposal means pursuant to the rebanding program.

Harris will be responsible for returning removed equipment and returning unused replacement radios to Sprint-Nextel in accordance with the Schedule D of the County's Frequency Reconfiguration Agreement (FRA) with Sprint-Nextel.

8. Final Acceptance

With the completion of ATP tests, cutover, and submission of the final drawing package, the Harris project manager will submit the final system acceptance letter for the County to sign. With the final acceptance, the Harris project manager will arrange a meeting with the field service team to review maintenance support during the warranty period. The team will provide the contact information and procedures that will be used to obtain service during the warranty period. Contact numbers and procedures will be provided for normal working hours and after hours call out.

Figure 29. Final Acceptance Responsibility Matrix

Tasks	Harris	County	Comments
P25 Phase 1 system installation complete and punch list items resolved	X		
Successfully complete Functional Acceptance Test Plan	X		
Accept functional test results		X	
Submit final as built package in electronic form *	X		
Submit letter of final system acceptance	X		
Provide warranty and contact information	X		
Accept final as built package		X	
Sign letter of final system acceptance		X	

* As-built package will include, site specific licenses, interconnect drawings, site drawings, individual site alignment/test data and other critical information. Copies will be provided for each site. Harris recommends that this important site data be inventoried periodically, as part of the routine preventative maintenance program, to ensure that it remains accessible to Harris and County maintenance resources.

9. Assumptions

Harris' proposal is based on the information obtained from the information on hand, and from the various system installations and prior experience of dealing with Sprint-Nextel on other rebanding opportunities. The following assumptions are applicable to Harris' scope of work.

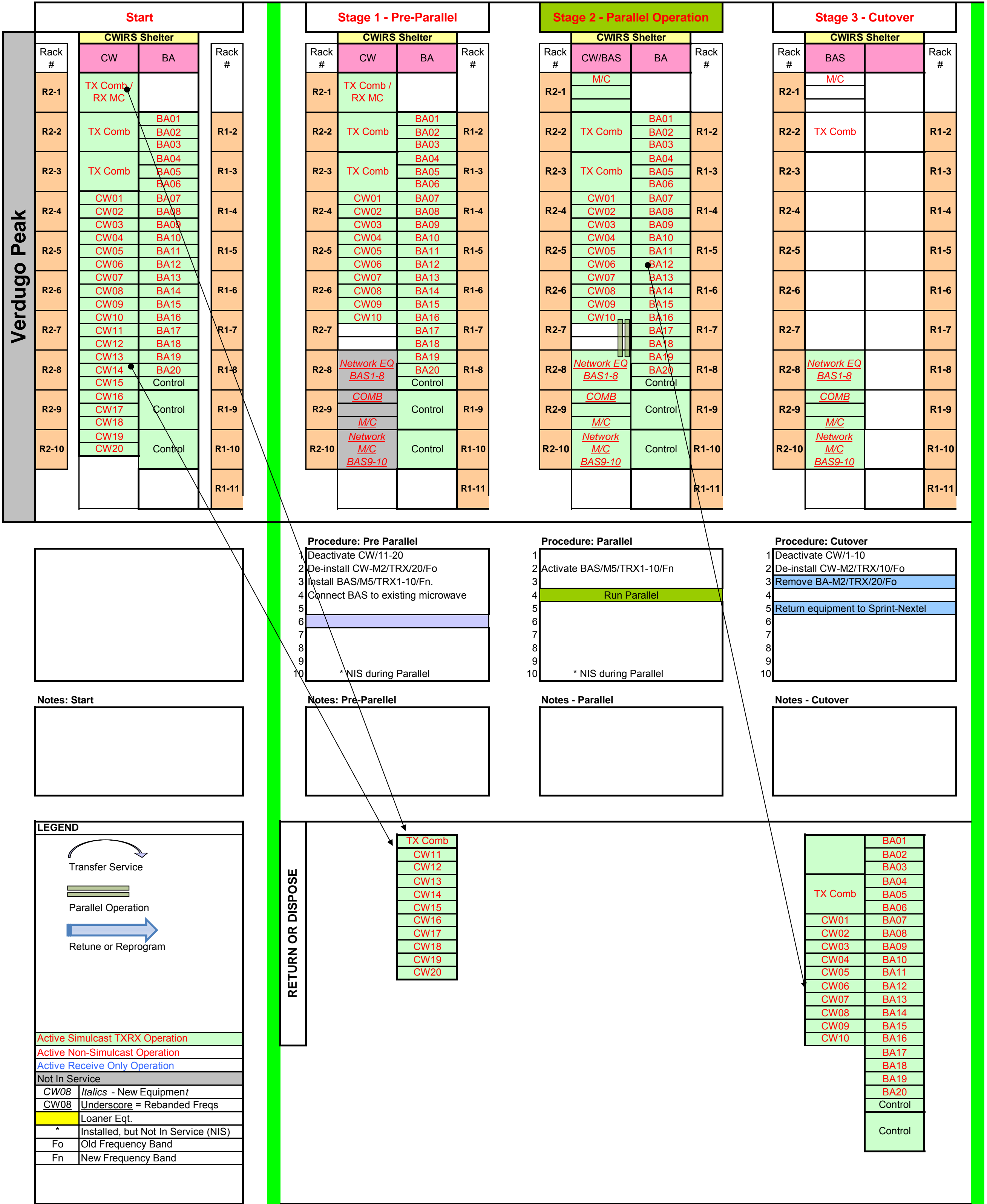
- Maintenance services are outside the scope of this contract. Harris will not be responsible for latent deficiencies with County equipment intended to be reused within the project.
- Harris assumes that the following CWIRS subscriber radios have the capability for P25 Trunking and the systems/groups capacity to accommodate dual EDACS and P25 personalities:
 - Retained County EDACS radios upgraded to P25
 - Sprint-Nextel provided EDACS radios upgraded to P25
- County will provide adequate microwave bandwidth and quality of service for backhaul connectivity.
- County provided shelters will accommodate the height of 86" open racks and allow them to be positioned so that 36 inches of free aisle space can be maintained.
- Small cell channel 858/813.2625 does not reband.
- Harris' scope of work assumes the reuse of the existing County operational PR9D NSC and two (2) simulcast IP control points.
- RF sites are as identified in this Statement of Work. Any change in the designated site locations will be addressed via change order.
- During the Cutover stage of the project, County will assist Harris in decommissioning and removing remaining EDACS infrastructure equipment so as not to affect operations in common with systems of others.
- The County will provide quantity four Subscriber programming / installation sites with access to space and power necessary for the performance of Subscriber work.
- The County will provide sufficient quantities of Subscriber radios / vehicles to enable programming / installation to occur within the scheduled time frames.

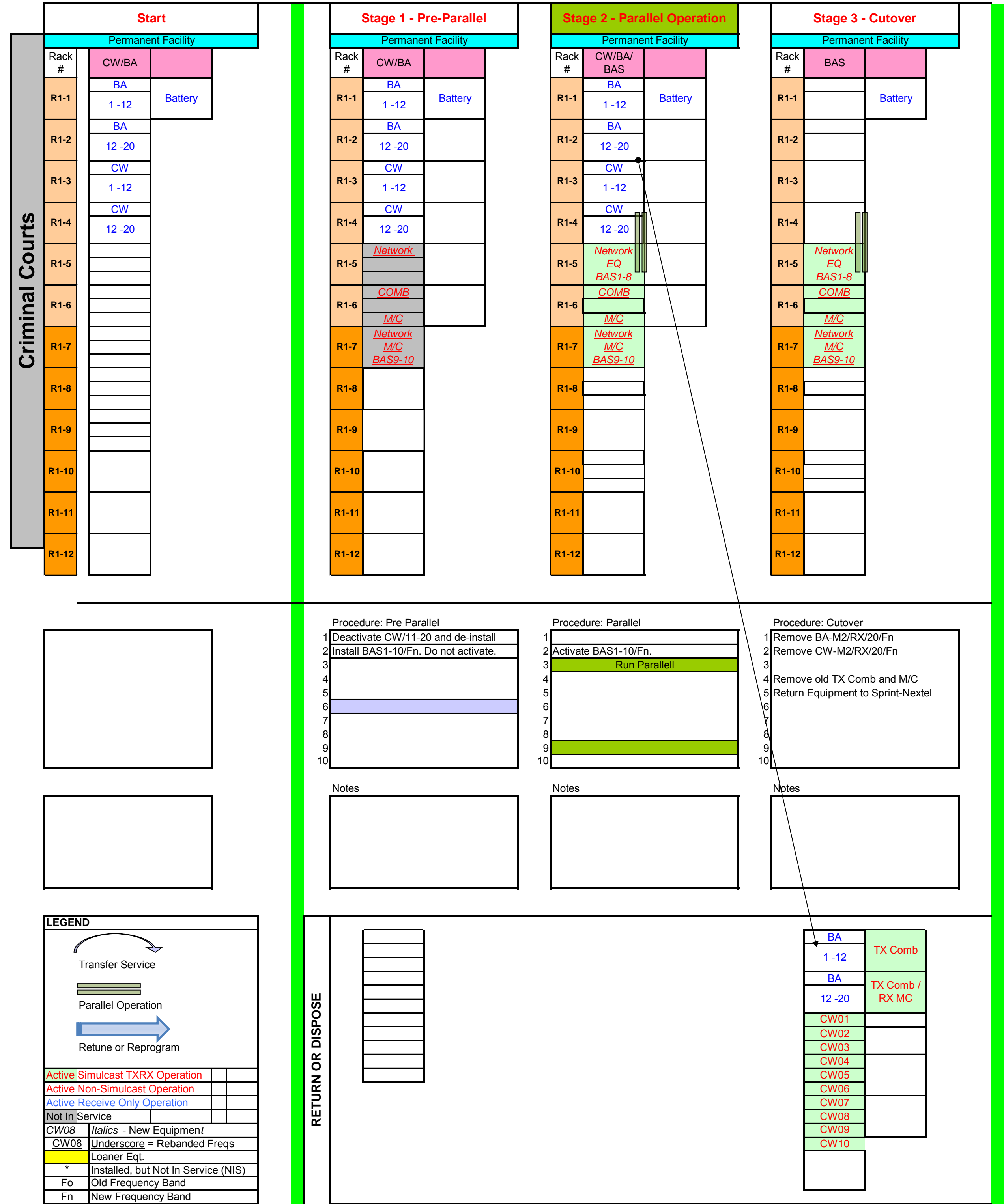
Attachment A

Site Migration Drawings

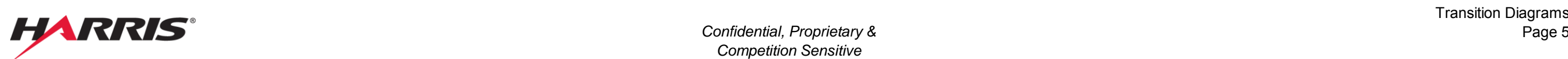




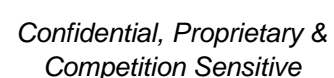


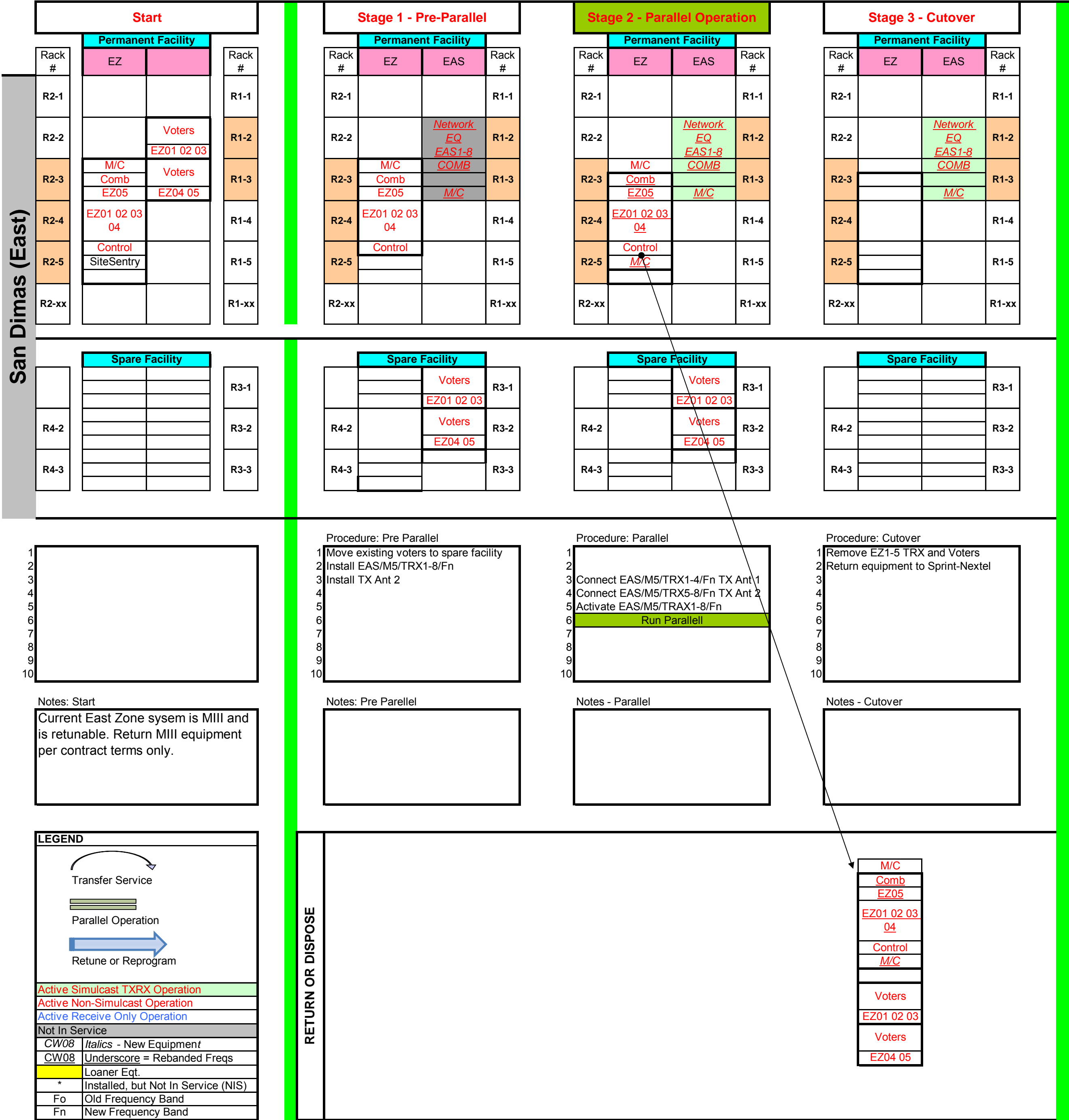




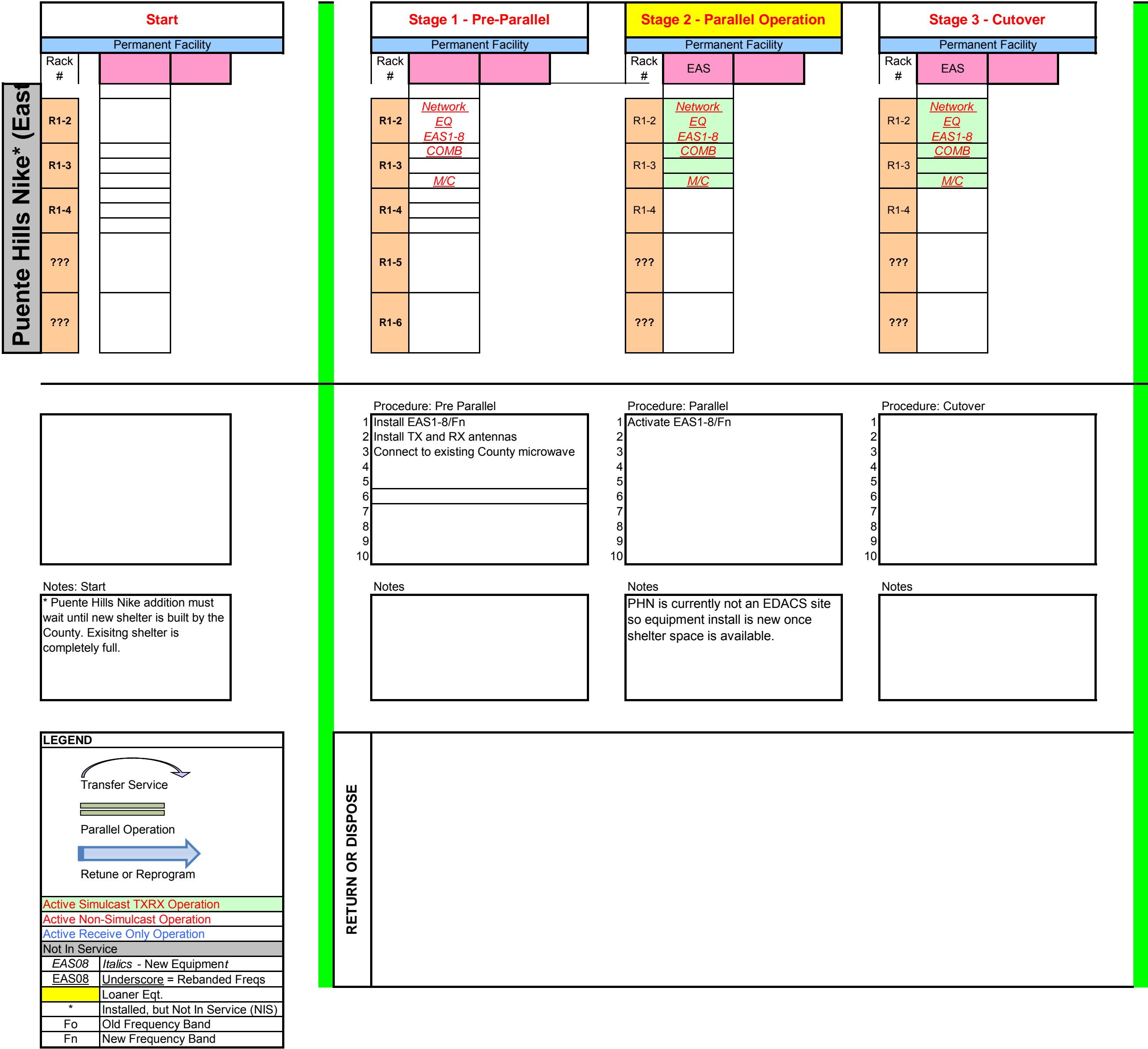












Procedure: Cutover

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Notes

LEGEND

Transfer Service

Parallel Operation

Retune or Reprogram

Active Simulcast TXRX Operation

Active Non-Simulcast Operation

Active Receive Only Operation

Not In Service

EAS08

Italics - New Equipment

EAS08

Underscore = Rebanded Freqs

Loaner Eqt.

*

Installed, but Not In Service (NIS)

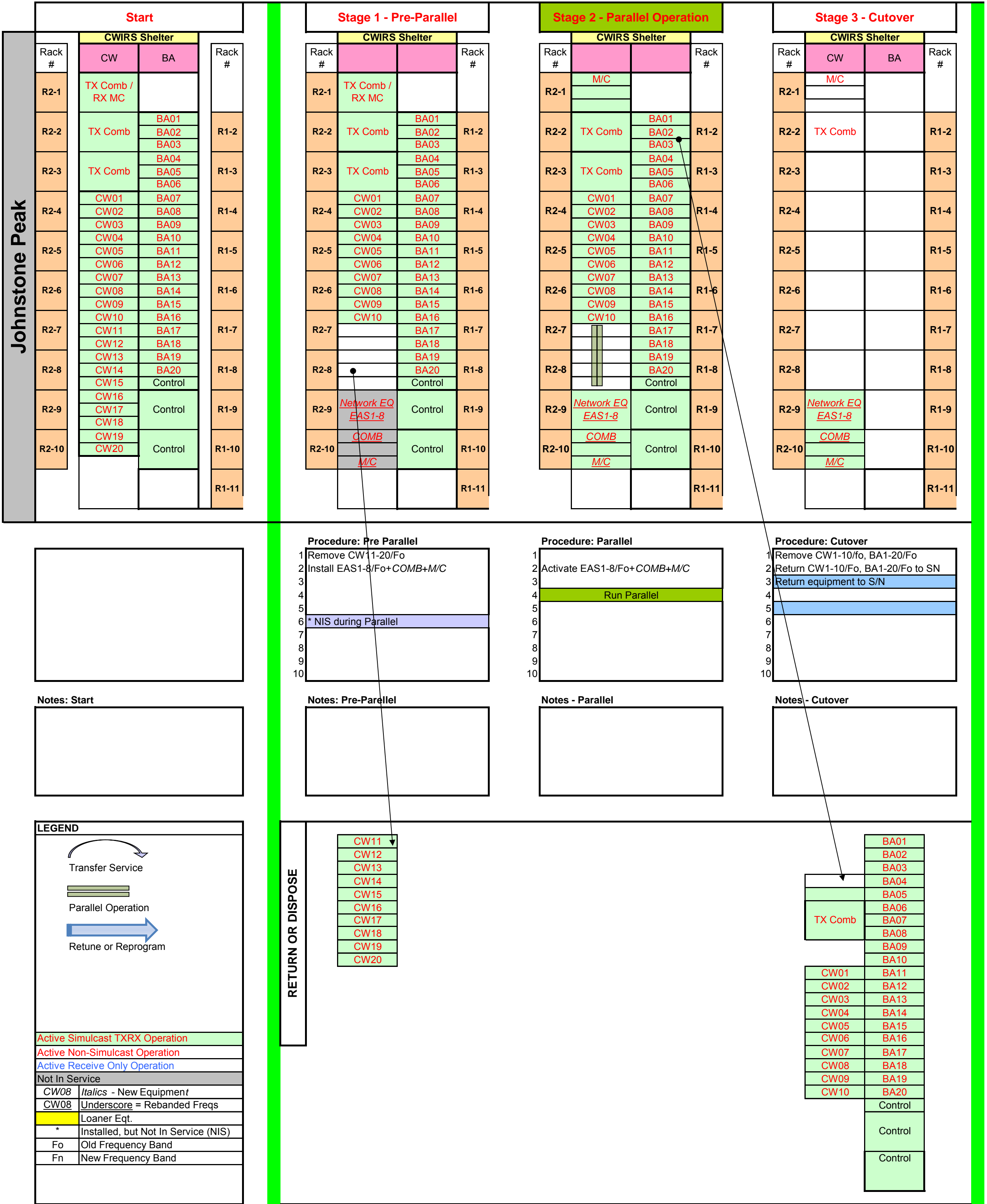
Fo

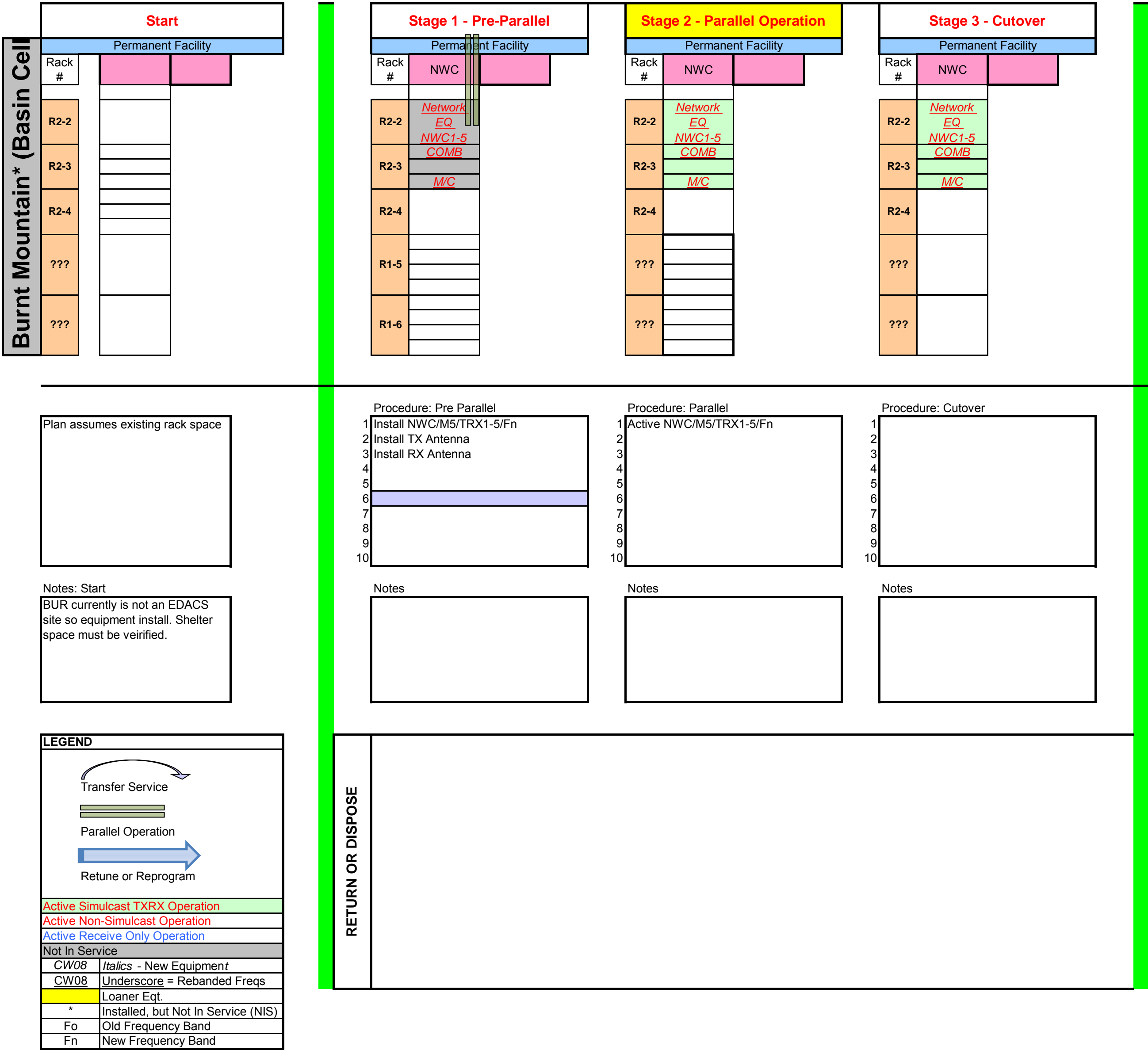
Old Frequency Band

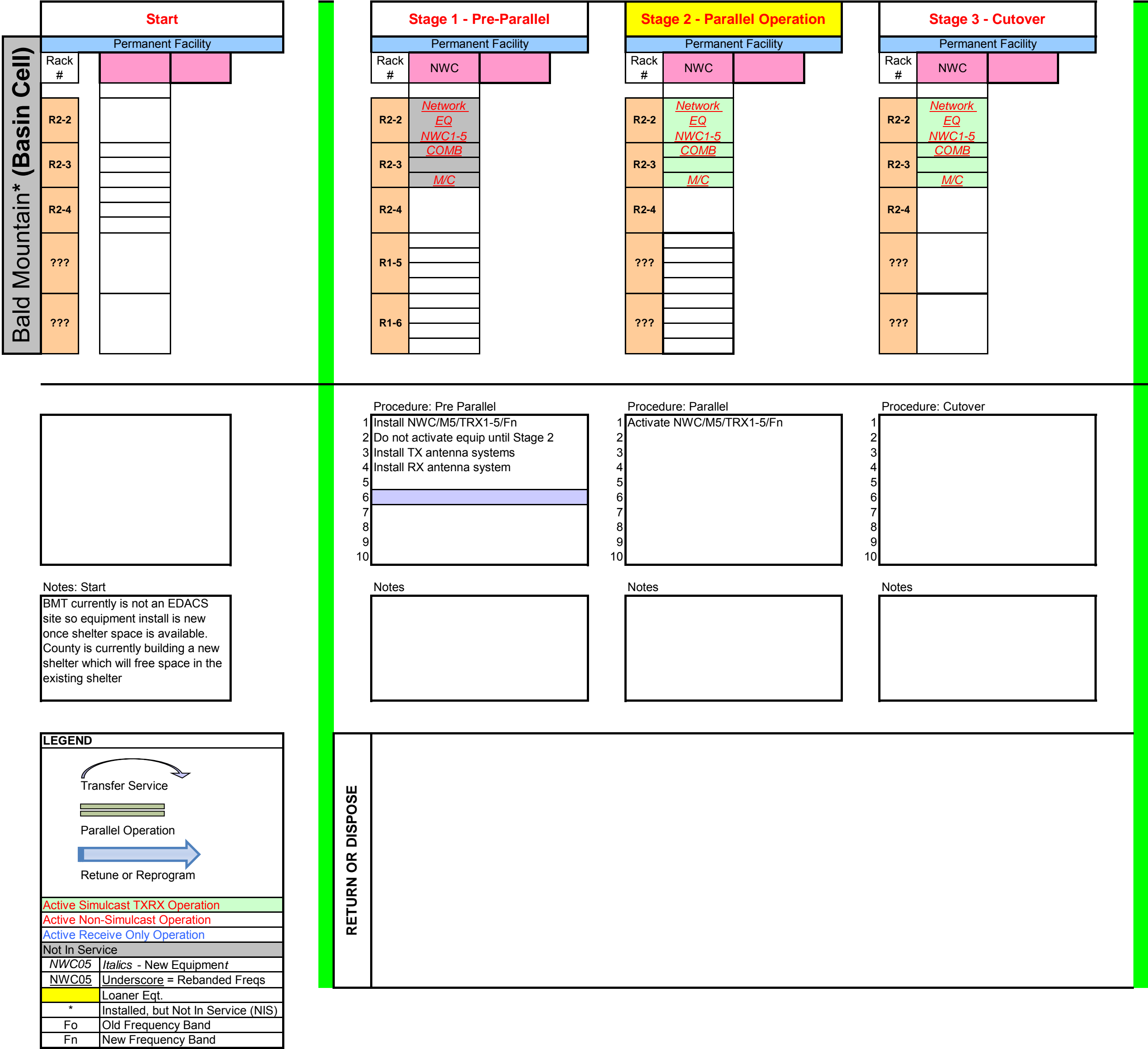
Fn

New Frequency Band

RETURN OR DISPOSE







Procedure: Pre Parallel

1 Install NWC/M5/TRX1-5/Fn

2 Do not activate equip until Stage 2

3 Install TX antenna systems

4 Install RX antenna system

5

6

7

8

9

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Procedure: Parallel

1 Activate NWC/M5/TRX1-5/Fn

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Procedure: Cutover

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Notes: Start

BMT currently is not an EDACS site so equipment install is new once shelter space is available. County is currently building a new shelter which will free space in the existing shelter

Notes

Notes

Notes

LEGEND

Transfer Service

Parallel Operation

Retune or Reprogram

Active Simulcast TXRX Operation

Active Non-Simulcast Operation

Active Receive Only Operation

Not In Service

NWC05 *Italics* - New Equipment

NWC05 Underscore = Rebanded Freqs

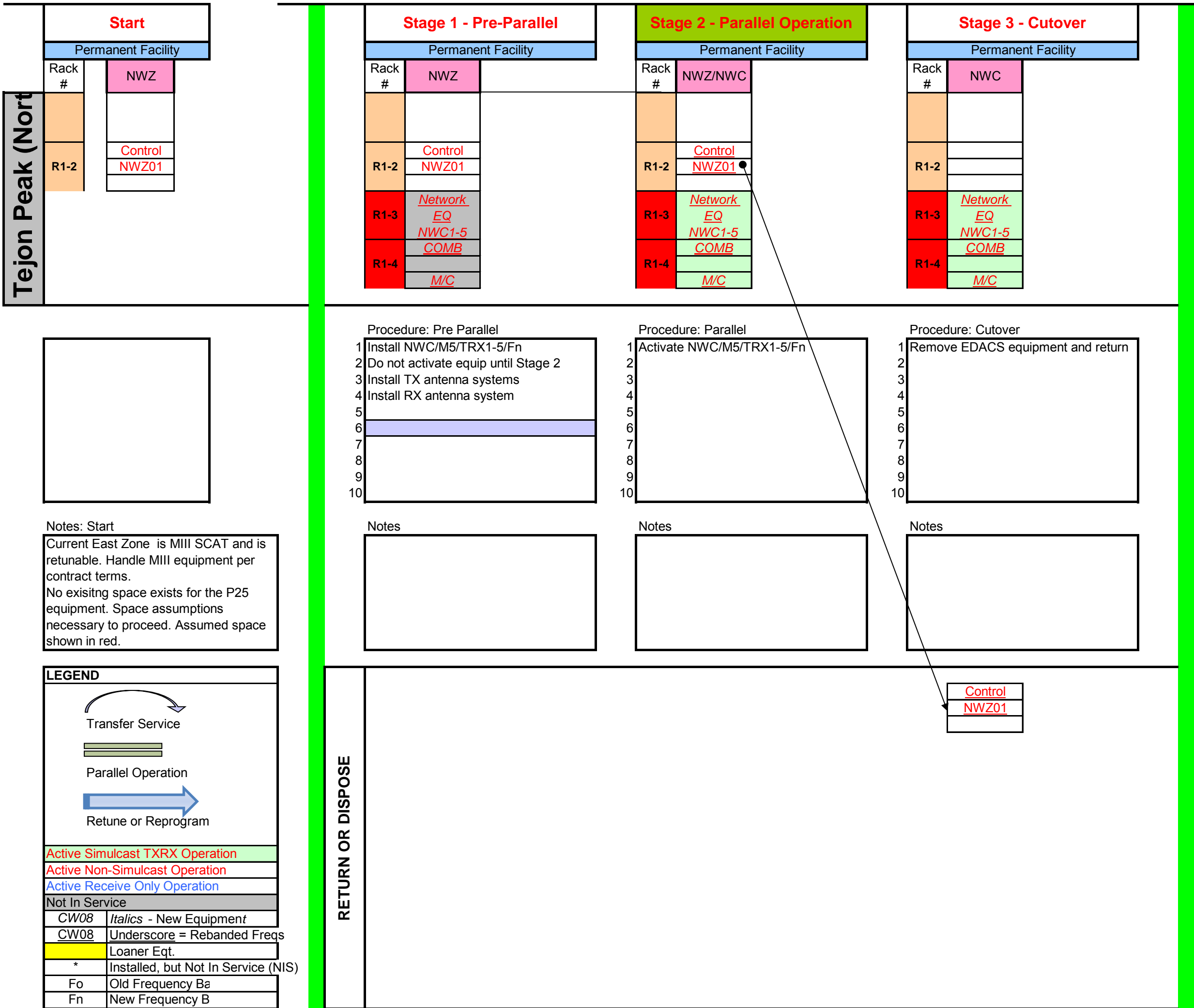
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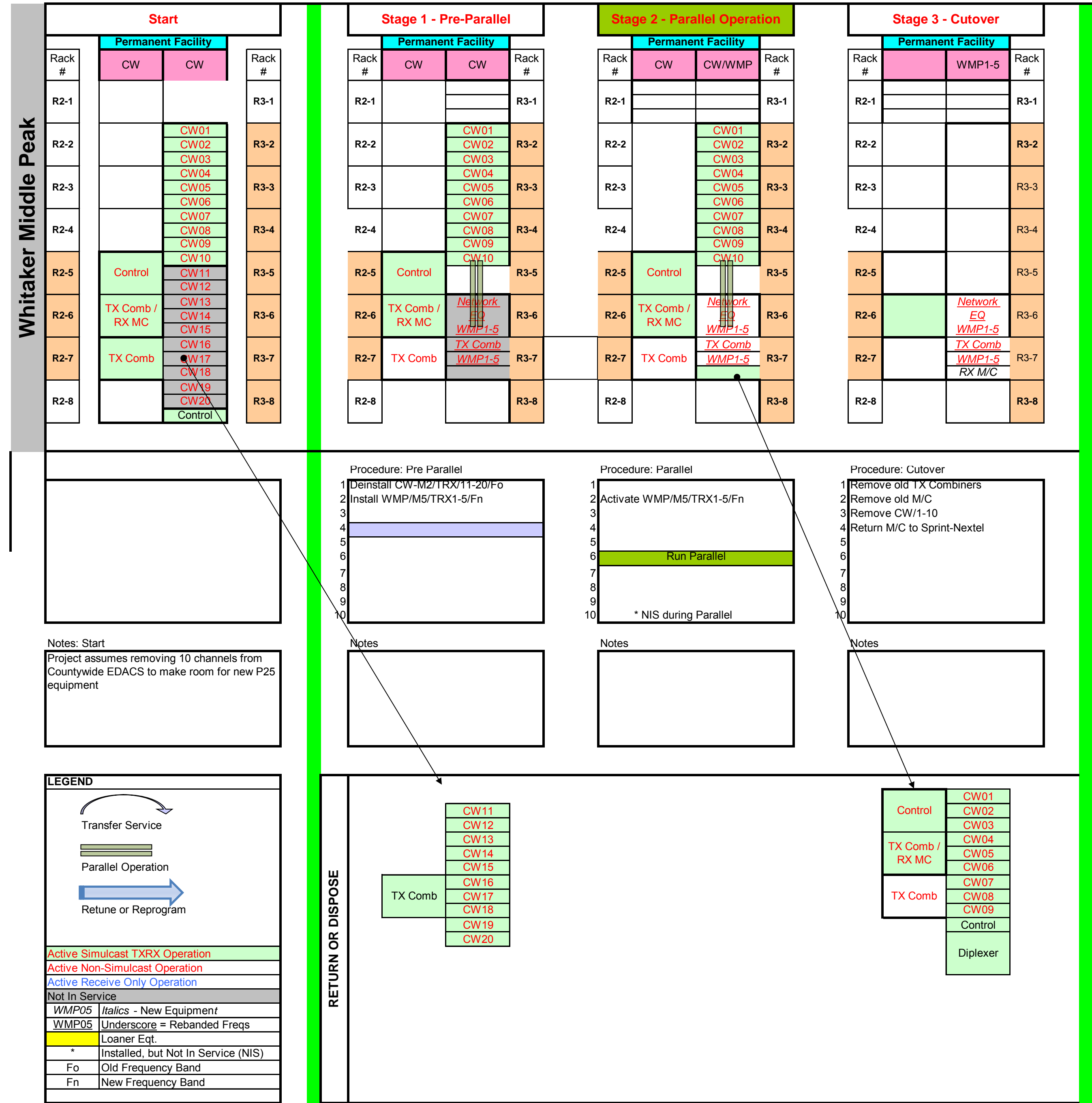
* Installed, but Not In Service (NIS)

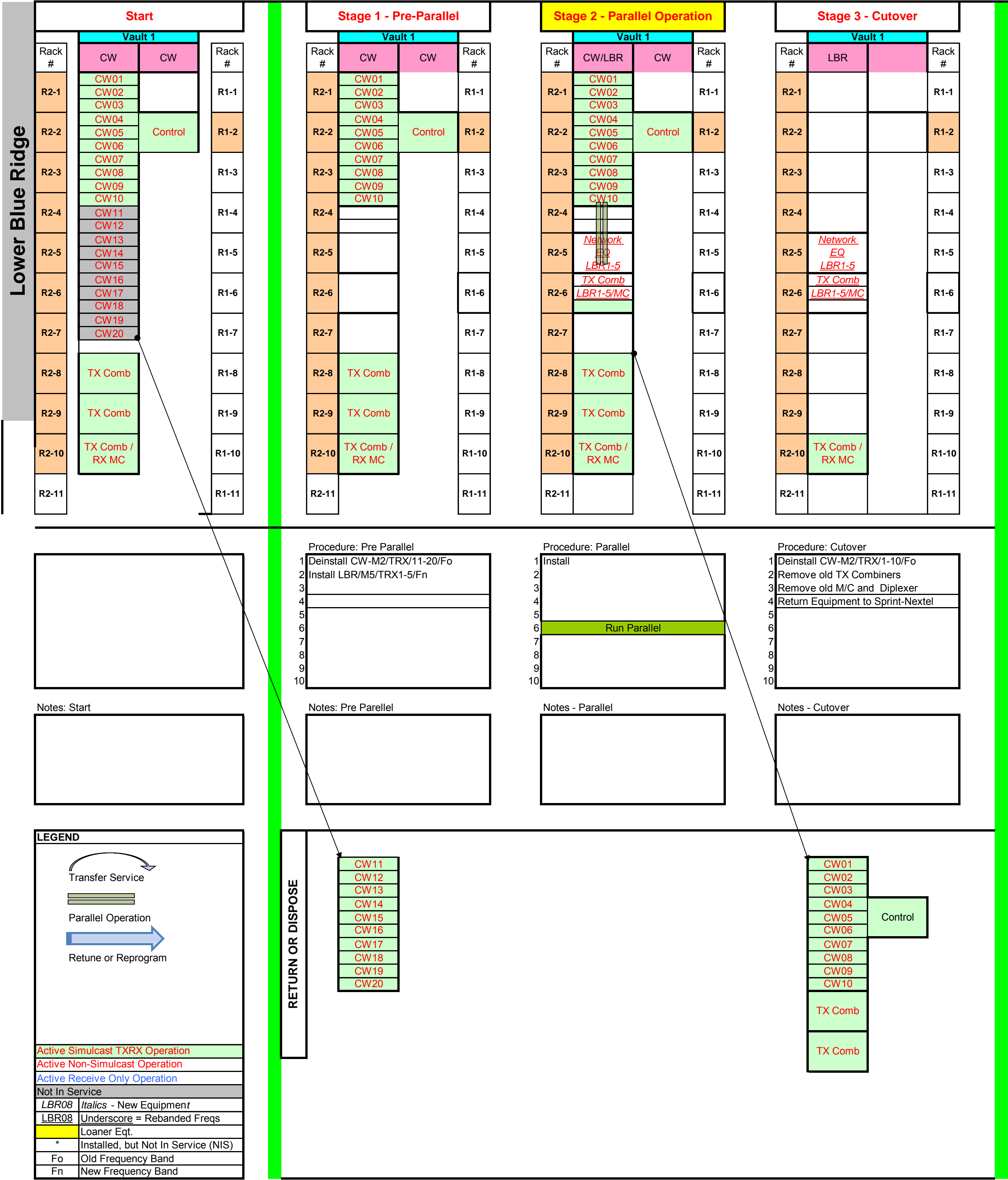
Fo Old Frequency Band

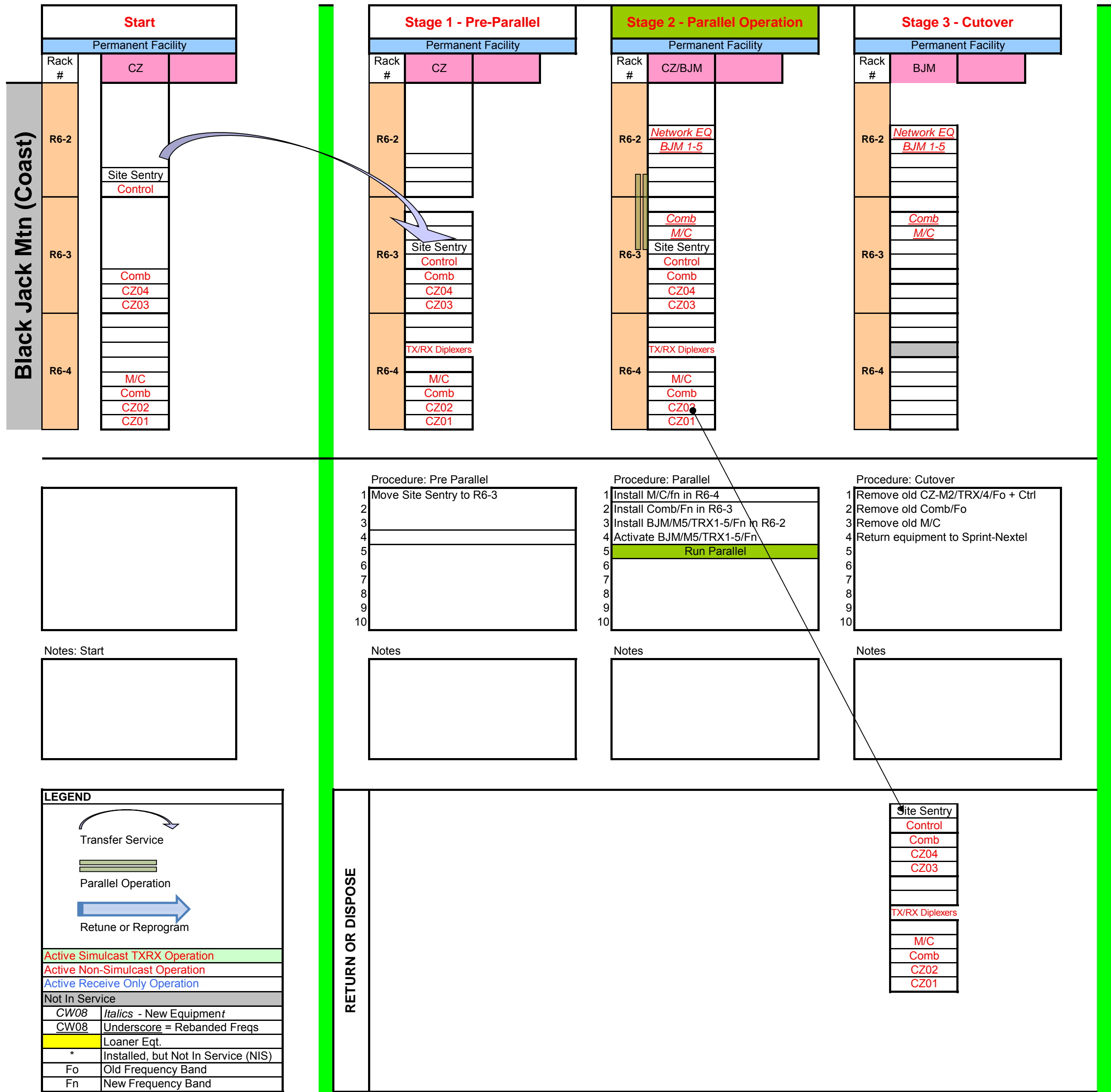
Fn New Frequency Band

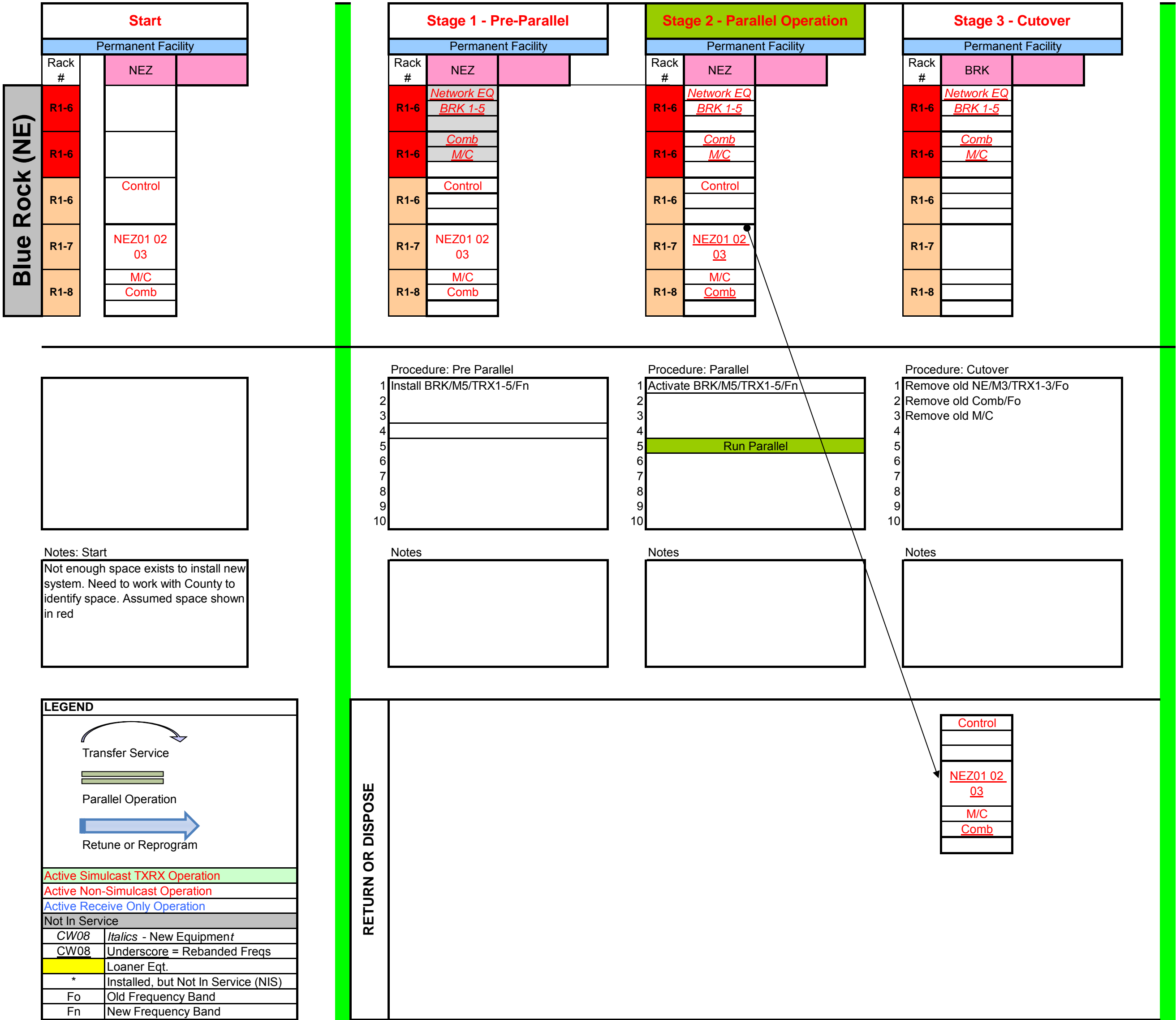
RETURN OR DISPOSE

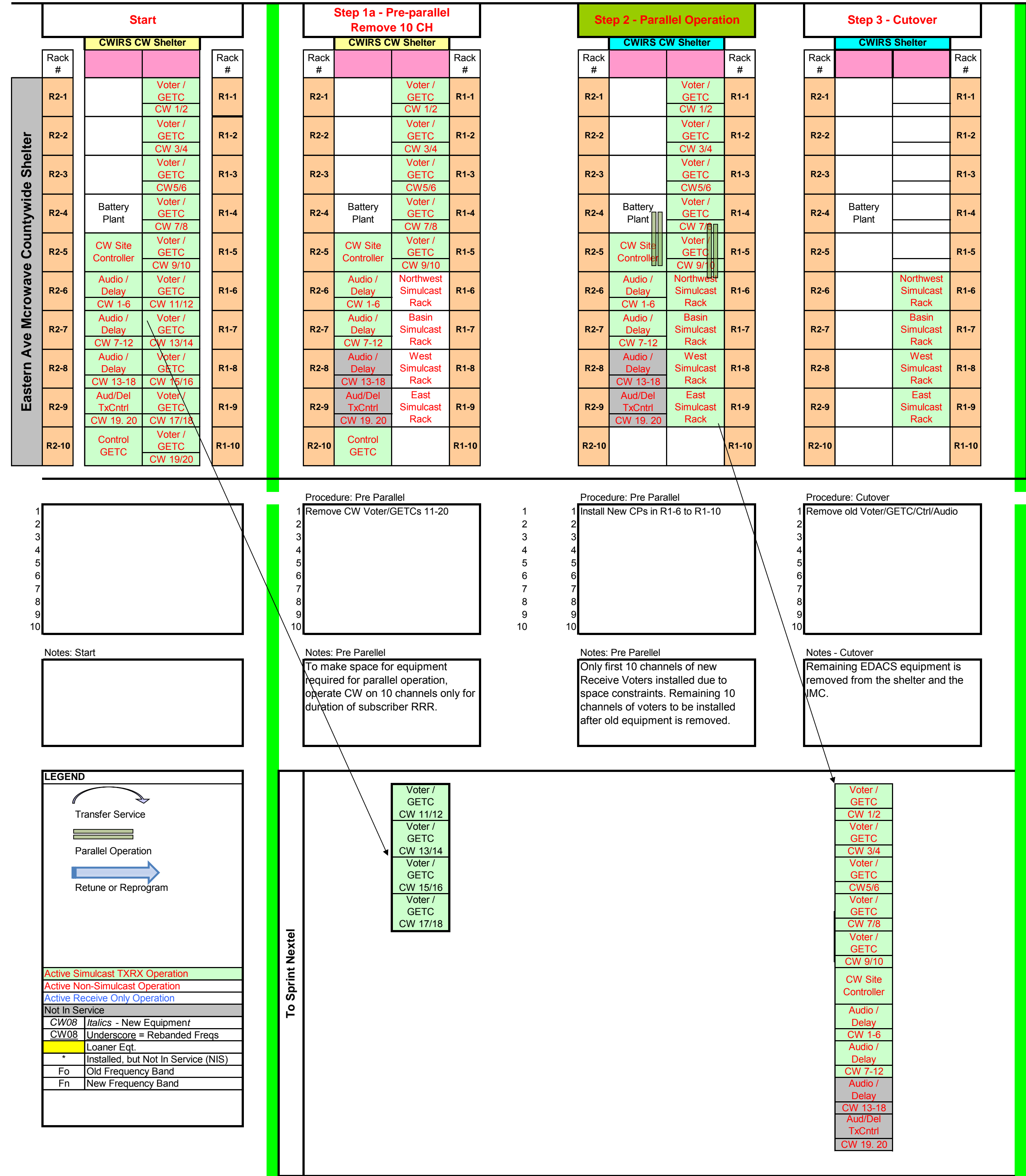






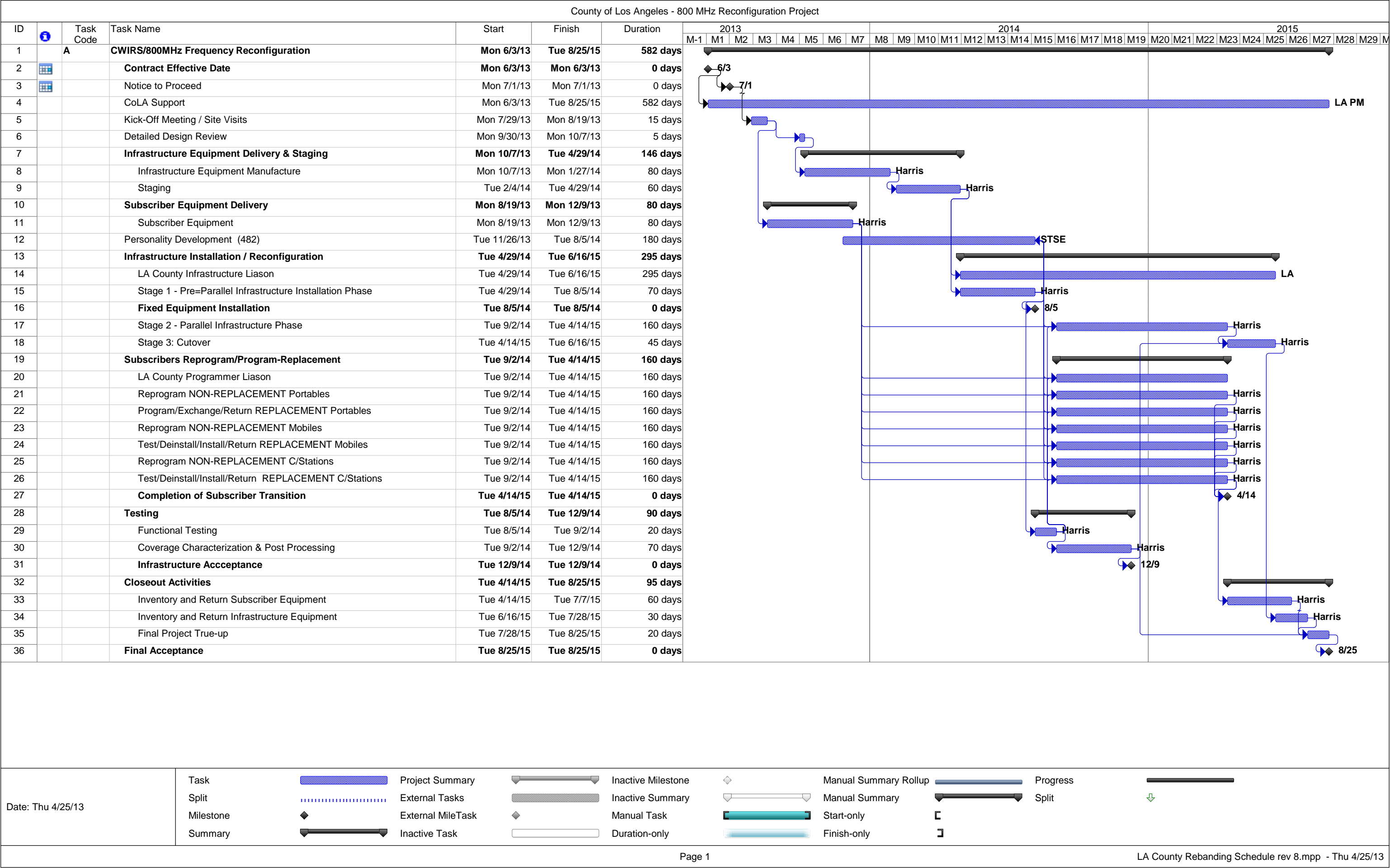








Attachment B
Project Schedule
Date: April 25, 2013



Page 1

LA County Rebanding Schedule rev 8.mpp - Thu 4/25/13

Attachment C
Functional Test Procedure
Date: April 16, 2013



Functional Test Procedure
for
County of Los Angeles

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ABOUT THIS DOCUMENT

This document was specifically prepared for the customer shown below. Each section of this document is individually maintained in the Harris document control system. The revisions of each section are individually listed.

Customer: County of Los Angeles

Prepared By: Brian Willnecker, Harris Corporation

Total Test Pages: **50**

DOCUMENT USAGE

Many of the tests in this document will need to be run on multiple pieces of equipment. For instance a console test may be run on three consoles. For tests that need to be run multiple times, log in the comment section of the result box the identifier of the equipment tested.

System parameters and measurements will be provided to County of Los Angeles as part of the as-built documentation package.

SUBSCRIBER UNIT USAGE

All tests for subscriber (terminal) units in this document will be performed with Harris subscriber units unless the test setup identifies another Vendor's subscriber unit to be used for the test.

1. CUSTOMER APPROVAL

This Functional Test Procedure has been read and approved for use as the system acceptance test.

Customer Representative

Harris Corporation

Signature

Signature

Printed name and title

Printed name and title

2. *SYSTEM ACCEPTANCE*

This Functional Test Procedure has been successfully completed.

Customer Representative

Harris

Signature

Signature

Printed name and title

Printed name and title

Date

Date

3. *VISUAL INSPECTION*

3.1 Visual Inspection

Setup

Prior to the actual Functional test, a physical inspection of the radio equipment must be performed. All equipment locations must be inspected. Any discrepancy, which affects operator safety must be corrected before the remaining tests are performed.

Execution

1. Verify the area is clean and that all cabinets and racks are both clear of debris and clean.
2. Verify all equipment racks are spaced per the drawings, secured and grounded.
3. Verify all rack cables are dressed, secured and correctly marked.
4. Verify all nameplates and labels are in place.
5. Verify all protective foam, tape, and packing material has been removed.
6. Verify all punchblocks are labeled.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

4. P25 REGIONAL NETWORK MANAGER (RNM) AND UNIVERSAL ADMINISTRATION SYSTEM (UAS)

4.1 Site Access Control (UAS)

Setup

Access to UAS or an UAS client.

Ensure Regional Site Manager is connected into network and into site.

Radios 1 & 2 programmed with ID's valid on the site under test. Set to Group A.
Radio 3 programmed with an ID not valid on the site under test. Set to Group A.

Execution

1. If not already accomplished, download a database of valid radio ID's from the UAS to the site.
2. Program Radio 3 with an ID not within that list of valid radio ID's.
3. Attempt to PTT Radio 3. Verify access to the site is denied.
4. PTT Radio 1. Verify access to the site is permitted and audio is heard on Radio 2.
5. Enable Radio 3 in the UAS database and download.
6. PTT Radio 3. Verify access to the site is permitted and audio is heard on Radio 2.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

4.2 Unit Enable/Disable

Setup

Obtain 2 radios switched to the same Group and note the IDs. Switch on the radios and ensure that they communicate. Verify all sites are on line. Note that Unit Disable will automatically delete the encryption key from the radio as it is disabled. To restore unit functionality, the radio must have the encryption key re-installed.

Execution

1. Select group A on both radios and verify that the radios can communicate.
2. From the UAS:
Select UNIT ENABLE/DISABLE.
Under the UNIT Enable/Disable tab, enter the ID of radio 1 to be modified.
Select the DISABLE button and check the status.
3. Attempt to PTT the radio and verify that it will not communicate with the system. PTT radio 2 and verify that radio 1 cannot receive the call.
4. Enable the ID of radio 1. Verify that the Enable/Disable screen indicates that the Current State of the radio is Enabled. Confirm that the radios can communicate in unencrypted mode.
5. Switch off radio 2 and disable it from the Enable/Disable screen. Verify that the desired state is Disabled and the Current State is Enabled. Switch on the radio and verify that, on logging into the site, it becomes disabled. Verify that the State settings change to Disabled and that the radios cannot communicate.
6. Enable both radios and verify that radios can communicate in unencrypted mode.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

4.3 Dynamic Regroup

Setup

Ensure that Dynamic Regroup is a feature of the customer's radios. Ensure that both the Radio ID's and the Talkgroup IDs to be used are in the database and that the database has been successfully uploaded to site(s).

Radio 1 set to Talkgroup A.

Radio 2 set to Talkgroup B.

Execution

1. From the UAS client, send a dynamic regroup command to Talkgroup C for Radio 1 and Radio 2.
2. Verify that Radio 1 and Radio 2 are forced to Talkgroup C.
3. At Radio 1 and Radio 2, attempt to change talkgroups away from Talkgroup C. Verify that both radios are forced to remain on Talkgroup C.
4. PTT Radio 1 on Talkgroup C. Verify that Radio 2 hears audio on Talkgroup C and can respond.
5. Clear the dynamic regroup command from the UAS client. Verify that both Radio 1 and Radio 2 are no longer forced to Talkgroup C (i.e., they can select other predefined talkgroups).

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

4.4 Unit Deregistration

Setup

Radio 1 allowed on System X, Site 1; programmed to Group A.
Radio 2 allowed on System Y, Site 1; programmed to Group B.

Note MES AGE timeout (in VNIC) for deregistration or reduce it to a smaller value just for the purpose of testing.

Execution

1. PTT Radio 1 on Group A and verify it communicates on the system to Radio 2.
2. Return call from Radio 2 to Radio 1 on Group A.
2. Turn off radio 1 and wait for expiration of the radio timeout period.
3. PTT Radio 2 on System Y, Site 1 after expiration of timeout. Verify no channel is assigned to the System X, Site 1, since Radio 1 has deregistered from site.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

4.5 Real Time Site Monitoring (RNM)

Setup

Access to a Regional Network Manager and within radio coverage of a site connected to that Region.

Radio 1, Radio 2, and Console A operating on the site & NSC under test, all programmed with Group A.

Execution

1. On the RNM, open the real time event viewer for the site's channels by clicking the Realtime Viewers button from the Task Launcher. Click Site Calls. Select the site and expand. Select channels to add.
2. Place a group call from Radio 1 to Radio 2 on the site, and verify that the event viewer displays the talkgroup ID and calling party ID. Verify the state changes from Free to Talk. Verify the TG Alias displays the Group #.
3. Place an emergency call from Radio 1 to Radio 2 on the site, and verify that the event viewer displays the Emergency indication (in the VNIC Time Stamp column) in addition to the talkgroup ID and calling party ID.
4. Place an individual call from Radio 1 to Radio 2 on the site, and verify that the event viewer displays an Individual call on the channel. Verify the VNIC-assigned Talk Group ID changes with each transmission.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

4.6 Site Usage Reports (RNM)

Setup

Ensure radio traffic has occurred across the network recently. If necessary or desired, place some calls with a known radio ID on multisite talkgroups prior to running the test for reference during the test.

At the Regional Network Manager or Central Network Manager, enter a URL of "http://<RNM ip address>/report/", where <RNM ip address> is the IP address of the Network Manager under test.

Execution

1. From "site-oriented reports," select the following:
 - Report scope: display activity in region [Region ID under test].
 - Report type: Site-oriented reports/"Calls per site in the selected region"
 - Report duration: Yesterday
 - Chart options: top 20
2. Select "Create Report"
3. Verify a graph of "Calls by Site" displays with the Region's correct number of sites.
4. Click the hyperlinked numeric value under the Calls column. Verify a table indicating talkgroups, caller, duration, and sites is displayed.
5. Click the "Back" button in the web browser.
6. Click the numeric value under the Site ID column. Verify multiple graphs indicating the number of calls by hour, voice group, call type, User ID, etc. are displayed.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

4.7 Infrastructure Summary (RNM or CNM)

Setup

Access to the Regional or Central Network Manager.

Execution

1. From the Task Launcher click Network Viewer. Expand the tree and select desired level (1,2,3) to view.
2. From the View menu, select Icons and verify the Infrastructure is presented in Icon view.
3. From the View menu, select List and verify the Infrastructure is presented in List view.
4. From the View menu, select Details and verify the Infrastructure is presented in Detail view.
5. Choose Icon view and select an Object. Right Mouse Click and select Properties or any other desired menu attribute to view information related to the object.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

4.8 Alarm Indications (RNM)

Setup

Access to the site under test and its RNM. The alarm will need to be generated by a channel being physically powered-down. Refer to the Manual for explanation of the alarms. Note the time of the alarm condition for later tests.

Execution

1. Generate an alarm indication on the site by turning OFF a channel's repeater. For some MASTR V systems, powering down a channel would result in the loss of two channels. Alternately, the MASTR V Traffic Controller can be disengaged from the card cage backplane to simulate loss of a single channel.
2. On the RNM, select the Network Viewer from the Task Launcher to view site alarms. Verify that the RNM indicates a site alarm for the affected channel (the object turns Red).
3. Turn the repeater back ON. Verify that the alarm clears after acknowledgement of the initial alarm (the object turns Green).
4. Review alarm details by performing a Right Mouse Click on an Object. Select the desired menu option.
5. Repeat showing alarms for Router Failure, RF Interference, Site Link failure.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments:	_____	

4.9 Site Reconfiguration

Setup

Access to the Regional Network Manager and a site under test with at least 3 channels. Reconfiguration of a site requires using the Device Manager application to make changes. Previously, site parameters could be modified from the RNM using the "Remote Login" function for each traffic controller (SitePro). The traffic controller no longer supports remote telnet with write privilege sessions due to enhancements in security. The Device Manager application runs under Microsoft Windows operating system, which may reside on various hardware platforms such as a Laptop PC, the Regional Site Manager Server, or other Windows compatible computer. Changes to site parameters, required for this test procedure, will be executed from a separate computer using Device Manager.

Execution

1. In the RNM, access the screen to configure channel parameters.
2. Make a site configuration change, such as forcing the Control Channel to operate on just channels 1 & 2 of the site. Download changes to the site.
3. Force the Control Channel to rotate from Channel 1 to Channel 2 by holding the reset button on the SitePro card for 3 seconds. Observe that the Control Channel rotates to Channel 2. Optionally reset one of the channels using Device Manager and observe the channel rotation.
4. Force the Control Channel to rotate from Channel 2 by holding the Channel 2 SitePro card reset button for 3 seconds. Observe that the Control Channel rotates back to Channel 1, rather than to Channel 3. Optionally reset one of the channels using Device Manager and observe the channel rotation.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

5. P25 SITE FEATURES

Setup

This setup applies to the tests contained in this section. Three radios are required, programmed as follows:

(Utilize test or customer data base groups A, B, C & D as specified here)

Radio 1:	All Call group (Group A)
Radio 2:	(Group A) (Group B)
Radio 3:	(Group A) (Group C) (Group D)

Note1: Additional radios are required for Call Queue Declaration Alert test.

Note 2: Group priorities 5 = 200 (@ UAS), 3 (@ site) highest

4 = 100 (@ UAS), 7 (@ site) mid

3 = 10 (@ UAS), 10 (@ site) lowest

Group matrix			
Name	GID	Priority	Comments
Group A		5	
Group B		4	
Group C		4	
Group D		3	
Group E		3	Announcement Group for Group A, B, C and D.

5.1 Group Call

Setup

Set radios 1, 2, & 3 to (Group A) per test group structure. Make sure Scan is turned OFF.

Execution

1. PTT radio 1 and talk. The transmit (TX) indicators should turn on at radio 1.
2. Audio should be heard in radios 2 & 3. The ID of radio 1 should be seen at radios 2 and 3.
3. Set radio 3 to (Group C). PTT on radio 1 and talk. The transmit (TX) indicators should turn on at radio 1.

4. Audio should be heard in radio 2 only. The ID of radio 1 should be seen at radio 2 only.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

5.2 Individual (Private) Call

Setup

Set radios 1, 2, & 3 to (Group A) per test group structure.

Execution

1. Using the radio 1, select the pre-stored ID of radio 2 or enter the radio 2 ID directly from the keypad, and PTT radio 1.
2. Verify that radio 2 receives the call and displays the ID of radio 1. Verify that radio 3 remains idle.
3. Release the PTT on radio 1 and immediately PTT on radio 2.
4. Verify that radio 1 receives the call and displays the ID of radio 2. Verify radio 3 remains idle.
5. Using the radio 1, select the pre-stored ID of radio 3 or enter the radio 3 ID directly from the keypad, and PTT radio 1.
6. Verify that radio 3 receives the call and displays the ID of radio 1. Verify that radio 2 remains idle.
7. Release the PTT on radio 1 but do not immediately PTT radio 3. Verify that radio 3 gives a Call Back Alert (WHC-"Who Has Called") Indication. Then make the return call from radio 3 back to radio 1.
8. Verify that radio 1 receives the call and displays the ID of radio 3. Verify radio 2 remains idle.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

5.3 Recent User Priority

Setup

This test requires 2 more trunked radios than there are site working channels. Disable channels (if necessary) until there are 2 working channels at the site. Thus, 4 radios are required for this test. Set up the radios 1, 2, 3, and 4 to different talkgroups, with each talkgroup configured for equal talkgroup priorities. Save and upload the database if required.

This test is to be run with no other users on the system and at intervals as set in the Recent Caller Interval (a time of greater than 10 seconds is recommended for the test which is configurable in the SitePro).

Execution

1. PTT and release radio 1 (establish a recent user entry).
2. PTT radios 3 and 4 and hold on transmit to busy both working channels.
3. PTT and release radio 2 (queue a call less recent than radio 1).
4. PTT and release radio 1 (queue the recent user).
5. Unkey radio 4 and verify that radio 1 unqueues and transmits.
6. Unkey all radios.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

5.4 Call Priority For Group IDs

Setup

This test requires two more radios than there are site working channels. The procedure is presented assuming there are two working channels. Disable channels (if necessary) until there are two working channels on the site. Thus, 4 radios each with a different group are required for this test. At the group database, set up the groups of radios 1, 2 and 3 for voice call priority 3 (medium). Set up the group of radio 4 for priority 6 (highest). Make sure the ID voice priority of each of the radios is less than or equal that of the respective Group ID (GID) voice priority. Save and upload the database.

Execution

1. PTT radios 1 and 2 and hold on transmit to busy both working channels.
2. PTT and release radio 3 (medium priority entry into the queue).
3. PTT and release radio 4 (high priority entry into the queue).
4. Unkey radio 1 and verify that radio 4 unqueues and keys.
5. Unkey radio 2 and verify that radio 3 unqueues and keys.
6. Unkey all radios.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments:	_____	

5.5 Single Site Call Queue Declaration Alert

Setup

This test requires two more radios than the number of working channels on the selected system used for test. To minimize the test setup and radio requirements for sites with many channels, channels may be disabled on the site so only two working channels are operational.

Set up a number of radios equal to the number of operational working channels on the selected system (radio x, radio y, etc.) each with a different valid talk group selected.

Set up two additional test radios (radio 1, radio 2) both with the same valid group selected. This talk group must be different than the groups selected by the other test radios.

Ensure that group scan is disabled on all the radios.

Execution

1. Busy up all working channels on the system with the first set of radios (radio x, radio y, etc.) by pressing and holding the PTT button on each of the radios.
2. With all working channels busied, momentarily press and release the PTT button on test radio 1.
3. Verify that a Call Queued tone is heard at the radio.
4. Unkey (release PTT button) one of the first set of radios, ex. radio x.
5. Verify that radio 1 is assigned to the freed working channel and the grant tone is heard at the radio, without having to rekey the radio (redepress the PTT button).
6. Press the PTT button on radio 1 within the autokey time applicable to the radio type (approx. 2 seconds) to keep the assigned channel.
7. Verify that audio from radio 1 is heard at radio 2.

Results	(Pass/Fail) _____
Tester: _____	Date: _____
Comments: _____	

5.6 Emergency Call Priority For Group IDs

Setup

This test requires the same setup as for Call Priority with one of the radios programmed as a Supervisor radio (enabled to clear emergencies).

Execution

1. PTT radios 1 and 2 and hold on transmit to busy both working channels.
2. PTT and release radio 4 (high priority entry into the queue).

3. Declare an emergency on radio 3 (medium priority entry into the queue but now at Emergency Priority).
4. Unkey radio 1 and verify that radio 3 unqueues and is assigned a channel without having to PTT. (Key the radio within the specified autokey time in order to keep the channel.)
5. Unkey all radios and clear the emergency with the Supervisor radio.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

5.7 Unit to Unit Call Alert Paging

Setup

Radio 1 with Call Alert programmed into a button ("PAGE") and Radio 2's ID programmed into its Individual Call list.

Radio 1 & Radio 2 on the same site.

Execution

1. Select the PAGE function from the MENU on Radio 1. Select Radio 2 from the preprogrammed list of radios and PTT Radio 1.
2. Verify Radio 1 displays "**TX PAGE" on the second line.
3. Verify Radio 2 displays the ID of Radio 1 on its first line and "**RX PAGE" on the second line. Verify Radio 2 beeps multiple times to indicate a received page.
4. Verify Radio 1 beeps multiple times to indicate the page was successfully sent.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

5.8 Out Of Range Tone On PTT

Setup

One radio with valid ID and valid group on selected system.

System scanning disabled in radio personality as necessary for specific radio type being tested.

Execution

1. With valid group selected, and radio initially logged into and monitoring the control channel on the selected system, reduce the signal strength reaching the radio by some means (ex. unscrewing and removing the portable radio antenna, or moving further from the site).
2. Verify that the radio indicates loss of control channel on the display when the received signal strength is sufficiently reduced (i.e. out of range of system).
3. Press PTT button on radio, and verify that an out of range tone is heard at radio.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

5.9 Transmit Denied (for Invalid radio ID)

Setup

Program system so that radio ID is not valid on the site under test. Download database to site.

Execution

1. Press PTT button on radio with valid group selected.
2. Verify the radio is prohibited access to system.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

6. P25 TRUNKED FEATURES

Setup

This setup applies to the tests contained in this section. Three radios are required, programmed as follows:

(Utilize test or customer data base groups A, B, C & D as specified here)

Radio 1:	All Call group (Group A)
Radio 2:	(Group A) (Group B)
Radio 3:	(Group A) (Group C) (Group D)

Note1: Additional radios are required for Call Queue Declaration Alert test.

Note 2: Group priorities 5 = 200 (@ UAS), 3 (@ site) highest
 4 = 100 (@ UAS), 7 (@ site) mid
 3 = 10 (@ UAS), 10 (@ site) lowest

Group matrix					
Name	GID	Priority	Encryption	Key	Comments
Group A		5			
Group B		4			
Group C		4			
Group D		3			
Group E		3			Announcement Group for Group A, B, C and D.

6.1 All Call

Setup

Set radio 1 to All Call, radio 2 to (Group A) and radio 3 to (Group C).

All Call is defined in the I-Call set.

Execution

1. Place the All Call from radio 1.
2. Audio should be heard at radios 2 and 3.
3. Set radio 2 to (Group B) and radio 3 to (Group C).
4. Place the All Call from radio 1.
5. Audio should be heard at radios 2 and 3.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

6.2 Announcement Group Call

Setup

Set radio 1 to (Group E).
Set radio 2 to (Group A).
Set radio 3 to (Group B). Groups A & B are in Announcement Group E per test group structure. Ensure Scan is turned OFF.

Execution

1. PTT radio 1 and talk. The transmit (TX) indicators should turn on at radio 1.
2. Audio should be heard in radios 2 & 3. ANNOUNCE should be displayed at radios 2 and 3.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

6.3 Transmission Trunking

Setup

Set radios 1, 2, & 3 to (Group A) per test group structure. Make sure Scan is turned OFF.

Execution

1. PTT radio 1 and talk. The transmit (TX) indicators should turn on at radio 1.
2. Verify transmission trunking operation by noting that repeater channel in use is freed after PTT is released (i.e., no message trunking operation).

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

6.4 Transmit Grant Tone

Setup

One radio with valid ID and valid group on selected system.

Grant tone (Ready to Talk tone) enabled in radio personality as applicable for specific radio type being tested.

Execution

1. Press PTT button on radio with valid group selected.
2. Verify grant tone is heard at radio when working channel access is granted.

Note: If the call is queued, the grant tone will be delayed until the call is assigned a working channel.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

6.5 Group Scan

Setup

Two radios (radio 1, radio 2) each with valid IDs and two valid groups (group A, group B) on selected system.

Radio 1 set up with group A and group B in the scan list, group A selected, and group scan initially disabled.

Execution

1. Place a call from radio 2 on talk group A.
2. Verify the call is received and audio is heard on radio 1.
3. Place a call from radio 2 on talk group B.
4. Verify the call is not received by radio 1.
5. Enable group scan on radio 1.
6. Place another call from radio 2 on talk group B.
7. Verify that the call is now received and audio is heard on radio 1.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

6.6 Priority Scan

Setup

Set radio 1 to priority scan Group A and scan (at lower priority) Group B. Set radio 1 to Group C. Have scan enabled on radio 1.

Set radio 2 to Group B.

Set radio 3 to Group A.

Execution

1. With group C selected on radio 1, place a call from radio 2 on Group B.

2. Verify radio 1 scans to Group B and hears audio from radio 2. Continue transmitting from radio 2.
3. Place a call from radio 3 on Group A.
4. With radio 2 still transmitting on Group B, verify radio 1 priority scans to Group A and hears audio from radio 3.

Results	(Pass/Fail) _____
Tester: _____	Date: _____
Comments: _____	

6.7 Transmit Busy Lockout

Setup

Two radios (radio 1, radio 2) each with valid IDs and same valid group on selected system.

Talk group used for test must be set up as transmission trunked. This feature does not apply to message trunked calls.

Execution

1. Place a call from radio 1 on selected talk group by pressing and holding the PTT button.
2. Verify the call is received and audio is heard on radio 2.
3. While the call is in progress, press the PTT button on radio 2.
4. Verify that radio 2 does not transmit over (step on) the call in progress.

Results	(Pass/Fail) _____
Tester: _____	Date: _____
Comments: _____	

6.8 Continuous Control Channel Update

Setup

This test requires two trunked radios and a test group.

Execution

1. Set both radios to the test group.
2. Turn one radio OFF.
3. Key one radio and hold. Turn ON the second radio (and set it to the test group if necessary).
4. Verify that the second radio joins the call in progress and hears audio from the call in progress.
5. Unkey the first radio.

Results	(Pass/Fail) _____
Tester: _____	Date: _____
Comments: _____	

6.9 Convert To Callee

Setup

This is a test of single site simultaneous call arbitration. Have two radios programmed to operate on the same site and group.

Execution

1. Set two radios to the same site and group.
2. Key both radios at the same time.
3. Verify that one radio ends up transmitting and the other ends up receiving.
4. Verify that the call audio is routed.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

7. P25 WIDE AREA FEATURES

7.1 Multisite Group Call

Setup

Set radios 1, 2, & 3 to (Group A) per Customer or Test Group structure.

Execution

1. PTT radio 1 and talk. The transmit (TX) indicators should turn on at radio 1.
2. Audio should be heard in radios 2 & 3. The ID of radio 1 should be seen at radios 2 and 3.
3. Repeat previous steps for encrypted voice if applicable.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

7.2 Individual (Private) Call

Setup

The radios must remain logged to different sites but switched to the same group. Radio 1 could be a system radio with a keypad or a scan radio with preprogrammed ID's of radios 2 and 3 in its personality. Set radios 1, 2, & 3 to (Group A) per Customer or Test Group structure.

Execution

1. Using radio 1 on Site 1, select the pre-stored ID of radio 2 (on Site 2) or enter the radio 2 ID directly from the keypad, and PTT radio 1.
2. Verify that radio 2 receives the call and displays the ID of radio 1. Verify that radio 3 remains idle.
3. Release the PTT on radio 1 and immediately PTT on radio 2.
4. Verify that radio 1 receives the call and displays the ID of radio 2. Verify radio 3 remains idle.

5. Repeat previous steps for encrypted voice.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

7.3 Multi-site Announcement Group Call

Setup

Set radio 1 to (Group E).
Set radio 2 to (Group A).
Set radio 3 to (Group B). Groups A & B are in Announcement Group E per test group structure. Ensure Scan is turned OFF.

Execution

1. PTT radio 1 and talk. The transmit (TX) indicators should turn on at radio 1.
2. Audio should be heard in radios 2 & 3. ANNOUNCE should be displayed at radios 2 and 3.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

7.4 Multisite Emergency Group Call

Setup

Program three radios with the same emergency home group. Set the supervisor radio (radio 1) and radio 2 to the home group. Set radio 3 to a different group (not home group). The radios must remain logged onto different sites.

Execution

1. Press the Emergency call button on radio 3 and talk within the pre-defined Emergency Autokey time, and/or PTT radio 3 during or just after that time.
2. Verify that radio 3 indicates the "TX EMER" declaration and that it reverts to the home group.
3. Verify that radio 1 (on Site 1) and radio 2 (on Site 2) indicate a "RX EMER" and hear audio on the emergency home group.
4. Clear the emergency with the Supervisor radio (radio 1). Verify the emergency clears in the radios.
5. Repeat the previous steps for encrypted voice.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments:	_____ _____ _____	

7.5 Multi-site Routing (for Multi-site Logout)**Setup**

This test requires the following:

Radio 1, logged into Site 1.

Radio 2, logged into Site 2.

Note: Site 1 and 2 should be selected such that Radio 2 can log into Site 1 and then Site 2. If coverage prevents this, then program a third radio with the ID of Radio 2. Use the third radio to key on Site 1 with the ID of Radio 2 whenever the test procedure calls for this. The primary objective of this test is to demonstrate that the system routes calls to Site 2 whenever a unit (i.e. radio 2) is logged onto Site 2 and does not route calls to Site 2 when no units are logged into Site 2.

Execution

1. Key Radio 1 on Site 1. Verify channel assignments occur on Site 2. Unkey radio.
2. Key Radio 2 on Site 1 (Radio 2 is no longer logged into Site 2). Verify no channel assignment occurs on Site 2 since there are no radios logged into Site 2. Unkey radio.

3. Key Radio 1. Verify no channel assignment occurs on Site 2 since there are no radios logged into Site 2. Unkey radio.
4. Key Radio 2 on Site 2. Verify a channel assignment occurs on Site 2. Unkey radio.
5. Key Radio 1. Verify a channel assignment occurs on Site 2 since Radio 2 is logged into Site 2. Unkey radio.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

7.6 Site Trunking (Failsoft) Indication

Setup

Radio 1 and Radio 2 enabled on the Site under test (Site 1), using Talkgroup A. Both radios must have a display.

Radio 3 on a different Site (Site 2) also programmed with Talkgroup A.

Execution

1. Verify that the Radio 1, Radio 2, and Radio 3 can communicate on the system.
2. Turn OFF power to or disconnect the SiteLink, causing loss of communication from the site back to the Network Switching Center.
3. Verify that Radio 1 and Radio 2 indicate a Failsoft alarm ("F") on their displays.
4. PTT Radio 1 on Talkgroup A. Verify audio is heard at Radio 2. Verify audio is not heard on Radio 3.
5. Reenable the SiteLink. Verify the Failsoft alarm disappears on the radios and that communications with Radio 3 is reestablished.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

7.7 Unconfirmed Call (Multisite Late-Enter)

Setup

Log Radio 1 into Site 1 on the test group A.
Log Radio 2 into Site 2 on the test group A.
Log Radio 3 into Site 2 on the test group A.
Make sure that Confirm Call is disabled for test group A at the two sites.

Execution

1. Key up additional radios on different groups (e.g., B & C) on Site 1 so that there are no channels available to process a call on Group A on Site 1. To reduce the number of radios required, some of the working channels on Site 1 can be disabled while performing this test.
2. Key up Radio 2 on Group A on Site 2. Radio 2 should get the grant tone and the call should go through to Radio 3 on Site 2. Since Site 1 has no channels available, the call should not go through to Radio 1 on Site 1.
3. While Radio 2 is still keyed up, free up a channel on Site 1.
4. Verify that the call gets routed to Site 1 and that Radio 1 late-enters into the call on that site.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

7.8 Confirmed Call

Setup

In the system, enable Confirm Call on a test group. Ensure that the group is set up for multisite operation.

Log the radios to the sites as follows:

Radio 1, Site 1 on the test group A

Radio 2, Site 2 on the test group A

Additional radios are required to busy the working channels. If the system is large, it might be necessary to disable channels at the two sites.

Execution

1. Key up additional radios on Site 1 so that there are no channels available to process a call on the Test Group on Site 1. To reduce the number of radios required, some of the working channels on Site 1 can be disabled while performing this test.
2. Key Radio 2 on Site 2 and verify that the confirmed call is not allowed to proceed until the "Confirmed Call Timeout" period has expired. The call should go through to Site 2, but not to Site 1.
3. Repeat this test, but this time, free up a channel on site 1 before the "Confirmed Call Timeout" period expires. Verify that the call goes through to both Site 1 and Site 2.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments:	_____ _____ _____	

7.9 Roaming (ProRoam)

Setup

The two radios used for this test must be capable (feature encrypted) and programmed for ProRoam. The radios must be valid on the two sites (Site 1 and Site 2) being used to conduct the tests. Site 1 and Site 2 should have overlapping coverage to verify Priority System Scan (if tested). Verify that the Tone Suppress Option is not selected in the personality so that an audible tone can be heard once the radios switch systems.

Program both radios for Dynamic Scan mode. The test may be completed with the Static setting if appropriate.

To test Priority System Scan (a.k.a., Preferred Site), ensure only Radio 1 has one of the sites (Site 1) used for the test as its Priority System. Have Radio 2's Priority System Scan site set to a site not near the sites used in this test (i.e., not Site 1 or Site 2).

Note that the display and indications of each model of radio differ. This test describes the general procedure for ProRoam Roaming. Refer to the specific radio operator's manual or the ProRoam Release Notes for details.

Log Radio 1 and Radio 2 onto the Site 1 used for this test. Ensure the radios are communicating on this system.

1.1.1 Roaming

Execution

1. Verify the name or indication of the system initially logged into by Radios 1 & 2 is Site 1.
2. Begin traveling toward an area where the coverage from Site 2 is stronger than the coverage from Site 1.
3. As you travel away from Site 1 towards Site 2, the signal quality of Site 1 will deteriorate. Once the signal level of Site 2 exceeds the programmed ProRoam parameters in the personality, Radio 1 and Radio 2 will switch to the Site 2. The radios will generate audible tones and will visually indicate that they have switched to Site 2.
4. After the radios have both switched to the Site 2, verify communications continue. (Test continued in 9.2 for Priority System Scan.)

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

1.1.2 Priority System Scan (Preferred Site)

Execution

1. Continued from Roaming test.

2. Begin slowly travelling from Site 2 back to the coverage of Site 1.
3. As you travel from Site 2 back to Site 1, Radio 1 will log back onto Site 1 (its Priority System) as soon as an acceptable signal is available, even if Site 2 has a stronger signal. Radio 2 will roam onto Site 1 only when its signal is stronger than the signal of Site 2.
4. Verify that Radio 1 scans back to Site 1 sooner than does Radio 2.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

8. *MAESTRO^{IP} P25 DISPATCH FEATURE SET*

These tests assume a valid LID/GID database with aliases defined for the test entities has been set up, privileged and programmed into the console under test. It also assumes radios have been programmed with the above test entities. Tests can be conducted first with the microphone/select speaker and then with the headset.

8.1 Transmitting With a Microphone (Group Calls, I Calls)

Setup

Choose a group to use as a test group

Program a radio with the test group.

Program a console module with the test group.

Review Console User Profile settings for Console under Test (i.e. Audio Indicators).

8.1.1 *Talk Group Call*

Execution

1. Press the INSTANT TX function (for example right mouse button) on the module with the test group. Verify that a channel access tone is heard, the XMT indicator is displayed and that the call is heard at the radio. Release the Instant TX key.
2. Press the SELECT button on the module with the test group. Verify that the SELECT indication for that module becomes highlighted.
3. Press the SELECT TX function. Verify that a channel access tone is heard, the XMT indicator is displayed and that the call is heard at the radio. Release the SELECT TX function.
4. Press the PTT foot pedal. Verify that a channel access tone is heard, the XMT indicator is displayed and that the call is heard at the radio. Release the foot pedal.

8.1.2 *Individual (Unit-to-Unit) Call*

Execution

1. Program a module with the ID of the test radio. Select the console module with the test unit ID.
2. Press the SELECT TX function. Verify that a channel access tone is heard, the XMT indicator is displayed and that the call is heard at the radio. Release the SELECT TX function.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

8.2 Receiving Calls (Unit ID Display, Talkgroup ID Display, Aliasing)

Setup

Program the test group into a module.

Set a radio to the test group.

8.2.1 Talk Group Call

Execution

1. Unselect the console module with the test group. Key the radio and verify that the call is heard at the Unselect speaker and that the calling radio ID and the Call Indicator are displayed.
2. Select the console module with the test group. Key the radio. Verify that the call is heard at the select speaker and that the calling radio ID and the Call Indicator are displayed.
3. Key the radio. Verify that the module call light is on, the call is heard at the Select speaker and the calling radio ID is displayed.

8.2.2 Individual (Unit-to-Unit) Call

Execution

1. Program a module with the ID of the test radio.
2. Select the console module with the test unit ID. Call the console from the radio (ICALL with Console ID). Verify that the call is heard at the select speaker and that the calling radio ID and the Call Indicator are displayed.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

8.3 Emergency Call and Emergency Alarm

Setup

This test requires a test radio capable of generating and clearing an emergency (i.e. Supervisor Radio).

Execution

1. UNSELECT the test group. Using the test radio, declare an emergency on the test group.
2. Verify the module turns red, the 'EMER' flag is briefly displayed in the module, the ID/Name of the test radio is displayed, the emergency message is displayed in the message window, and the emergency alert tone is heard on the console.
3. Pick the module with the emergency and depress 'Alarm Reset'. Verify the alert tone is silenced on the console, but the emergency is still displayed.
4. Select and transmit on the group with the emergency. Verify the test radio receives the call, and is still in emergency mode.
5. Clear the emergency using the 'EMER CLR' key. Verify the module no longer indicates an emergency.
6. Transmit on the test radio and verify the emergency is cleared and normal group calls have resumed.
7. With the test group selected on the console, declare an emergency on the test group. Verify the console and radio have the same indications as steps 2 to 4.
8. Clear the emergency with the console.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

8.4 Agency Broadcast (System Wide Call)

Setup

Choose an agency to use as a test group

Program at least two radios with different subfleets but in the same test agency.

Program a console module with the test agency.

Review Console User Profile settings for Console under Test (i.e. Audio Indicators).

Execution

1. Press INSTANT TX on the module with the test agency. Verify that a channel access tone is heard, the XMT indicator is displayed and that the call is heard at the radios. Release the Instant TX key.
2. Press the SELECT button on the module with the test group. Verify that the SELECT indication for that module becomes highlighted.
3. Press the SELECT TX function. Verify that a channel access tone is heard, the XMT indicator is displayed and that the call is heard at the radios. Release the SELECT TX function.
4. Press the PTT foot pedal. Verify that a channel access tone is heard, the XMT indicator is displayed and that the call is heard at the radios. Release the foot pedal.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

8.5 Alert Tones

Execution

1. Press the SELECT button on the module with the test group. Verify that the SELECT indication for that module becomes highlighted.
2. Press and hold the foot pedal or 'Selected Transmit' key. The test radio will receive the call. While still transmitting, press one of the three alert tone keys (Alert, Pulse, Warble). Verify the alert tone is received by the radio and also heard on the console.
3. While not transmitting, press and hold one of the alert tone keys. Verify the console transmits on the selected group, the test radio receives the call, and the alert tone is heard by the radio and console. When the Alert tone key is released, verify the call drops.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

8.6 Console Pre-Empt

Setup

Choose a group to use as a test group

Program two radios with the test group.

Program a console module with the test group.

Execution

1. Key the first radio on the test group and hold the call up. Verify that audio is heard at the second radio and the console.
2. Key the console on the test group and hold the second, pre-empting call up. Verify that the XMT indicator is displayed along with the pre-empted caller LID and CALL indicator. Verify that the second radio begins to hear the console audio and not the first radio call. Verify that the pre-empted radio audio is still heard on the pre-empting console.
3. Unkey the first radio. Verify that the pre-empted caller LID and CALL indicators are removed and the pre-empted radio audio is no longer heard on the pre-empting console.
4. Unkey the console. Verify that the call drops.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

8.7 Simulselect**Setup**

Program four test groups.
Have on hand 2 radios programmed to 2 of the test groups and logged onto site.

Execution

1. Create a 4 group Simulselect on the 4 test group modules. Verify that the ACTIVE indicator (i.e. S1 displayed in each module) for SIMULSELECT 1 comes ON and the SELECT indicators of the 4 group modules are ON and highlighted, respectively.
2. Un-select SIMULSELECT 1 and verify that the active indicator goes OFF.
3. Re-activate SIMULSELECT 1. Verify that the ACTIVE indicator comes ON.
4. Modify SIMULSELECT 1 by removing two of the groups in the Simulselect. This results in a two group Simulselect. Verify that the ACTIVE and SELECT indicators of the two remaining groups are ON and highlighted, respectively and the ACTIVE and SELECT indicators of the two deleted groups are OFF.

5. Set one radio on each of the test groups in the Simulselect and turn scan off. Activate and select SIMULSELECT 1. Key one of the radios on its test group. Verify that the call is heard at the select speaker and not at the other radio.
6. Repeat the previous step, except key the other radio.
7. Transmit from the console on SIMULSELECT 1. Verify that audio is heard at both radios.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

8.8 Patch

Setup

Program four test groups.

Have on hand, 2 radios programmed with 2 of the test groups and logged onto sites.

Execution

1. Create a 4 group patch on PATCH 1. Verify that the ACTIVE indicator for PATCH 1 (i.e. P1 indicator in each module) comes ON and the four modules are included in the patch.
2. De-activate PATCH 1 and verify that the ACTIVE indicator goes OFF.
3. Re-activate PATCH 1. Verify that the ACTIVE indicator comes back ON.
4. Modify PATCH 1 by removing two of the groups in the patch. Verify this results in a two group patch. Verify that the patch indicators of the two remaining groups are ON and the patch indicators of the two deleted groups are OFF.
5. Set each radio to a different test group in the patch and turn scan off.
6. Activate and Select PATCH 1.
7. Key one of the radios on its test group. Verify that the call is heard at the other radio and at the select speaker.

8. Repeat the previous step, except key the other radio.
9. Key the console by pressing the transmit bar. Verify that audio is heard at both radios.

Results	(Pass/Fail) _____
Tester: _____	Date: _____
Comments: _____	

8.9 Console to Console Interaction (Intercom and Crossmute)

8.9.1 Console Intercom

1. On Console A, program a module with the console ID of Console B. On Console B, program a module with the console ID of Console A. Select this module on both consoles. Transmit from Console A on the module for Console B.
2. Verify on Console A that 'XMIT' is displayed in the module. Verify that on Console B, 'BUSY' is displayed in the module. Release the transmit from Console A.
3. Answer the call at Console B by transmitting from Console B on the module for Console A.
4. Verify on Console B that 'XMIT' is displayed in the module. Verify that on Console A, 'BUSY' is displayed in the module. Release the transmit from Console B.

8.9.2 Console Crossmute

Setup

Establish two consoles (A and B) to test the Crossmute function. The Consoles must be on the same NSC. Program and select a test group on both consoles.

Execution

1. Place a call on console A on the test group.
2. Verify that console B can hear console A in the select speaker.
3. At console B, mute console A.

4. Place a call on console A on the test group and verify that it cannot be heard at console B.
5. Restore the desired cross mute setup.

Results	(Pass/Fail) _____
Tester: _____	Date: _____
Comments: _____	

8.10 Call History

Setup

This tests compares programmed module call activity to the history scroll lists. Utility page, dispatch menu will be selected. Select either the "Select History" or "Unselect History".

Execution

1. Press the 'Scroll Up' and 'Scroll Down' buttons to scroll through the Unselect call history list. Compare these calls with known activity.
2. Press the 'Scroll Up' and 'Scroll Down' buttons to scroll through the selected call history list. Compare these calls with known activity.
3. Press the 'Esc' button to exit the history scroll mode.
4. To monitor call history on a single group use the 'module history' button (on the 'module modify' menu. Use the 'scroll up' and 'scroll down' buttons to scroll through the calls for the picked module. Compare these calls with known activity.

Results	(Pass/Fail) _____
Tester: _____	Date: _____
Comments: _____	

8.11 User Definable Screens

Setup

Verify User Definable Screens (UDS) is installed on a Maestro Dispatch Console. This console may be used to develop and verify the custom screen configurations required by the customer dispatch center operations.

Execution

In the C3 Maestro Configuration Editor verify the appropriate message text is defined for the Radio Status message that will be used.

Example:

Number	Type	Message Text
1	RSM	RSM1-TXT
2	RSM	RSM2-TXT
3	RSM	In Route

In the UDS modify Screen File #2 as follows:

- A) Use the PAGE pull-down menu and select "BUTTON TEXT and COLOR".
- B) Change LABEL TEXT for PAGE button number 1 to "Fire Dispatch".
- C) Change LABEL TEXT for PAGE button number 2 to "Police Dispatch".

In the UDS modify Screen File #2 as follows:

- A) Use the MODULE pull-down menu and select ADD and RSM to add the previously defined RSM status
 - B) Position the module where desired on the console screen layout.
- Note: Existing modules may need to be deleted to make room for the new RSM modules.

Restart the C3 Maestro application and verify the changes have taken place on the Dispatch Screen.

Results	(Pass/Fail) _____
Tester: _____	Date: _____
Comments: _____	

9. P25 SIMULCAST ENHANCED FAILSOFT WITH SECURITY (BYPASS) OPERATION

9.1 Setup

Harris has renamed the P25 Simulcast Bypass in later system releases to Enhanced Failsoft with Security (EFS). Release PR9D still refers EFS as Simulcast BYPASS; as such, this test section will include references to Simulcast BYPASS.

Program the TX site SitePro modules (both Control Points and Transmit Sites) to the Final Configuration. Refer to the installation manual for the guide to setting TX SitePros / CP SitePros personality parameters.

Verify the BYPASS plan has been reviewed and approved by customer representative. This procedure makes assumptions on bypass sites before implementation and test of the System. After WMS/Panther signal strength data collection, final decision will be made on the actual bypass "ON" and "OFF" sites.

Prepare a minimum of two terminal radios programmed to operate on the active BYPASS site and the main simulcast system.

Site	SITE	SYSTEM	BYPASS	Other Notes
			On/Off	
<i>Plan to be developed at Detailed Design Review Meeting(s)</i>				

9.2 Site OFF - Final Configuration

Execution

Sites intended to be "OFF" in event of BYPASS must have all channels set to "N" for CC, Clear Voice, Digital Voice, and Data fields in the TX Site Traffic Controller modules.

1. Starting with site "2S", create a condition to force BYPASS by using the Regional Network Manager (RNM) function "Enter BYPASS" for the chosen site..
2. Verify transmit site is in BYPASS mode. The Traffic Controller module display indicates "TC" instead of "TR" . Note: TC= Working Traffic Channel, standalone mode, TR=Working Channel, simulcast mode, and Control Channel, simulcast mode is indicated by the transmit LED indicator.
3. Observe the repeater (station) Traffic Controller modules. Verify there is no active control channel.
4. Verify no stations are keyed or producing RF power.
5. Restore the site to normal by returning the site to simulcast mode using the RNM function "Leave BYPASS".
6. Verify transmit site is in normal simulcast mode. The Traffic Controller ro modules indicate "TR(n)" , where n is the channel number..
7. Repeat steps 1-6 for the remaining "OFF" BYPASS sites in the simulcast system under test.

Results	(Pass/Fail)	_____
Tester:	_____	Date: _____
Comments:	_____ _____ _____	

9.3 Site ON (trunking) - Final Configuration

Execution

1. Create a condition to force BYPASS by using the Regional Network Manager (RNM) function "Enter BYPASS" for the chosen site.
2. Verify transmit site is in BYPASS mode. BYPASS LED on BYPASS module and the Traffic Controller module display indicates either "TC" or "CC" instead of "TR."
3. Observe the stations/repeater Traffic Controller modules. Verify there is an active control channel on one of the Traffic Controller modules. The remaining repeater/stations Traffic Controller modules will indicate "TC".

4. Verify the station appearing as control channel is keyed, producing RF power and modulated with control channel data.
5. Verify a terminal radio set to the system programmed for the site in BYPASS with the correct site ID recognizes the site's control channel data.
6. Key the terminal radio on a group call.
7. Verify a working channel assignment is made within the channel group allowed in the personality.
8. Verify the call is heard on a second terminal radio set to the active BYPASS system.
9. Restore the site to simulcast mode using the RNM function "Leave BYPASS".
10. Verify transmit site is in normal simulcast mode. BYPASS LED on BYPASS module and SitePro modules indicate either "TR(n).
11. Repeat the Site OFF and Site ON tests for the remaining simulcast systems.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments:	_____ _____ _____	

9.4 Control Point Trunking Reset Control

A properly set up Simulcast BYPASS system will disable (hold in RESET) CPSitePro modules associated with active channels at a TX site operating in BYPASS. This keeps the remaining sites operating in Simulcast mode from being assigned to channels expected to be active at the site in BYPASS. Sites programmed to be OFF in BYPASS will not require any CPSitePro modules to be held in RESET.

This test will verify that the Control Point SitePro modules will be held in RESET corresponding to the active channels at a site as a result of the TX site being in BYPASS.

NOTE

This procedure requires simultaneous activity at the Control Point and Transmit Site.

Execution

1. Force a TX site that will become active into BYPASS by using the Regional Network Manager (RNM) function "Enter BYPASS" for the chosen site..
2. Verify TX site is in BYPASS mode.
3. Verify transmit site is in BYPASS mode. BYPS LED on Bypass module and the SitePro module display indicates either "TC" or "CC" instead of "TR".
4. Verify the Control Point "E" leads have become "inactive" by observing that the BYPASS LED on the System Bypass board located at the rear of the Common Rack associated with the site in BYPASS is ON.
5. Verify the System Bypass board OVERRIDE LED is OFF for the site in BYPASS, and its RESET ACTIVE LED is ON.
6. Verify the CPSitePro modules on the channels intended to be OFF are held in RESET. (on channel assignments.)
7. Observe the RNM screen for the simulcast system. Verify the channels intended to be OFF at the Control Point are report as held in RESET.
8. Restore the site to simulcast mode using the RNM function "Leave Bypass".
9. Verify the TX site SitePro modules revert to normal Simulcast.
10. Verify the Control Point "E" lead has returned to the "active" state by observing that the LED on the System Bypass board associated with the site in BYPASS is OFF.
11. Verify the System Bypass board OVERRIDE LED is OFF for the site in BYPASS, and its RESET ACTIVE LED is OFF.
12. Verify the CPSitePro modules associated with the site in BYPASS are returned to normal (*Not in RESET*).
13. Verify the failures clear as indicated on the RNM screen as a result of the CPTC RESET condition being cleared.

Results	(Pass/Fail)	_____
Tester: _____	Date:	_____
Comments: _____		

Attachment D

Coverage Characterization Test Procedure

Date: April 16, 2013



P25 Coverage Characterization
for
County of Los Angeles

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ABOUT THIS DOCUMENT

This document was specifically prepared for the customer shown below. Each section of this document is individually maintained in the Harris document control system. The revisions of each section are individually listed.

Customer: County of Los Angeles

Prepared By: Brian Willnecker, Harris Corporation

Total Test Pages: **14**

DOCUMENT USAGE

Many of the tests in this document will need to be run on multiple pieces of equipment. For instance a console test may be run on three consoles. For tests that need to be run multiple times, log in the comment section of the result box the identifier of the equipment tested. Although specific tests are not included relating to electrical measurements or timing parameters of equipment, these tests and levels are conducted and recorded as part of Harris' standard installation practices. These parameters include but are not limited to:

- Transmit Frequency and Deviation
- Output and Reflected Power
- Receiver Sensitivity
- Receiver Multicoupler Gain (if applicable)
- Receiver Preamplifier Gain (if applicable)
- Time Domain Reflectometry of Transmission Line
- Combiner Loss (if applicable)
- Audio line out
- Audio line in

System parameters and measurements will be provided to County of Los Angeles as part of the final documentation package.

SUBSCRIBER UNIT USAGE

All tests for subscriber (terminal) units in this document will be performed with Harris subscriber units unless the test setup identifies another Vendor's subscriber unit to be used for the test.

1. CUSTOMER APPROVAL

This Coverage Characterization has been read and approved for use as the coverage characterization.

Customer Representative

Harris Corporation

Signature

Signature

Printed name and title

Printed name and title

2. COVERAGE CHARACTERIZATION

This Coverage Characterization has been successfully completed.

Customer Representative

Harris

Signature

Signature

Printed name and title

Printed name and title

Date

Date

3. *SITE POWER MEASUREMENTS*

Harris shall provide all test equipment necessary to perform the following measurements.

- Transmitter Output Forward Power; per channel
- Transmit Combiner Output Power; per channel
- Transmitter Output Reverse (Reflected) Power; per channel

Measurements will be performed for each base station repeater, transmit combiner, and transmit antenna at each RF site. Results will be recorded using the following template. A report will be provided for each RF site.

Site Transmit Power Measurements

Site Power Data for: County of Los Angeles

Date: _____

RF Site: _____

Check configuration: ☐ Existing (pre-rebanding) ☐ Post Rebanding

Repeater Channel #	Transmit Combiner #	Transmit Antenna #	Transmitter Output Forward Power (Watts)	Transmit Combiner Output Power (Watts)	Transmitter Output Reverse Power (Watts)
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

(One row for each repeater/channel)

4. *REBANDING COVERAGE CHARACTERIZATION SIGNAL STRENGTH MEASUREMENTS*

This procedure is used by Harris to characterize coverage for large complex systems impacted by rebanding, including simulcast systems and systems where extensive changes have been made to the antenna subsystems. Based on measuring talk-out (base to mobile) signal strength, this procedure provides an accurate, statistically valid, repeatable, objective, and cost-effective method to characterize existing (pre rebanding) and post rebanding coverage throughout the County of Los Angeles Internal Services Department defined service area.

This ATP is in conformance with the Telecommunications Industry Association (TIA) Telecommunications Systems Bulletin TSB-88-C titled "Wireless Communications Systems - Performance in Noise and Interference-Limited Situations - Recommended Methods for Technology-Independent Modeling, Simulation, and Verification".

4.1 Setup

Harris' TYPHON wireless testing system is utilized to measure coverage performance. TYPHON uses Panther test receivers manufactured by Berkley Variatronics, known throughout the industry as reliable, accurate test devices that produce repeatable measurement results and is in conformance with industry standards. The accuracy of test measurements is maximized through periodic calibration of the TYPHON system and by virtue of its integral automated hardware and software that minimizes the likelihood of procedural errors. TYPHON consists of four Panther units with industrial grade measurement receivers to provide RSSI data for a single or multiple sites, a GPS receiver to provide accurate position information for each measured data point, a computer with an internal clock that coordinates and records the test data, and a roof mounted antenna. TYPHON contains multiple receivers to facilitate gathering data simultaneously from several multi-sites or simulcast sites at common measurement locations.

Prior to taking signal strength measurements, each site must be audited to verify that the radio system is operating properly. The audits will verify the antenna configuration, the power into the antenna, the antenna installation, and the frequency of the test transmitter. Harris shall provide all test equipment necessary to perform the audits.

4.2 Drive Route Planning

TSB-88-C recommends coverage verification measurements at a statistically significant number of random test locations, uniformly distributed throughout the service area. To accomplish this, the service area is divided by a grid pattern as an aid to the development of a drive test route with an approximately equal distance traveled in each grid. Harris recommends a 1-mile by 1-mile grid pattern to obtain an even or uniform distribution of approximately 4,000 grids throughout the County's service area. The grid pattern is overlaid onto street maps and a drive test route determined that will pass through all accessible grids (i.e. have roads) within the County's defined service area. The drive route should pass through each grid at least once but not more than twice, as far as is practically possible. Signal strength measurements will be made along the entire drive route.

4.3 Data Measurements

All data is collected with the TYPHON equipment mounted inside the test vehicle (standard passenger vehicle) with an external antenna mounted on the outside and centrally located on the vehicle's roof, with no other equipment installed on the roof.

Each radio system base station site transmits either on the control channel or an unmodulated carrier on one selected working channel, and measurements of this signal are made at equal distance intervals throughout the entire drive route. With the test vehicle in motion¹ along the drive route, a local mean signal measurement is made every 40 wavelength distance² traveled. By averaging a minimum of 200 data points within each 40 wavelength measurement window, the estimated mean value is within ± 1 dB of the actual value with 99% confidence.

4.4 Data Analysis and Presentation

All mean measurement data records collected along the drive route are post-processed, with data records recorded every 0.1-mile (typically) used in the final analysis.

The data records are plotted on a map showing both the areas measured and the measured results. The results can be adjusted with reference to the mobile measurement reference point using loss factors (portable body loss, random building loss category) to represent other operational or equipment configurations. Different pen colors are used to show ranges of measured mean signal levels corresponding to operational and equipment configurations.

Separate pre (existing) and post rebanding characterization maps will be provided.

A report is generated along with the maps to numerically show the results.

¹ Vehicle velocity must not exceed 60 miles per hour to ensure adequate number of points over the measurement window

² 40 wavelengths for UHF, 800 MHz and 900 MHz. 20 wavelengths for VHF 150 MHz.

5. ***BIT ERROR RATE (BER) CHARACTERIZATION***

This Bit Error Rate Characterization Procedure is used by Harris for RF coverage verification based on Bit Error Rate (BER) measurements. This procedure provides an accurate, statistically valid, repeatable, objective, and cost-effective method to characterization provided coverage.

This Characterization is in conformance with the Telecommunications Industry Association (TIA) Telecommunications Systems Bulletin TSB-88-C titled "Wireless Communications Systems - Performance in Noise and Interference-Limited Situations - Recommended Methods for Technology-Independent Modeling, Simulation, and Verification". TSB-88-C has defined Channel Performance Criterion (CPC) as the specified minimum design performance level in a faded channel, and provides a set of Delivered Audio Quality (DAQ) CPCs that define subjective voice quality performance applicable to digital voice systems.

TSB-88-C also defines a service area as a boundary of the geographic area of concern for a user, and states that Validated CPC Service Area Reliability shall be determined by the percentage of test locations in the bounded service area that meet or exceed the specified CPC. Harris has proposed a Bounded Area design for County of Los Angeles as defined in TSB-88-C wherein coverage predictions are made out to the boundary of the defined service area and coverage is characterized throughout the service area out to the boundary through the performance of a BER Characterization procedure .

RF coverage using this ATP is verified by measuring talk-out (base to mobile) BER throughout County's defined bounded service area, and calculating the percentage of measurements that are equal or better than a BER of 2% required to support County's specified CPC of DAQ 3.4.

5.1 **Setup**

Harris' TYPHON wireless characterization system is utilized to measure BER. TYPHON consists of mobile radios, a GPS receiver to provide accurate position information for each measured data point, a computer with an internal clock that coordinates and records the test data, roof mounted antennas, and variable attenuators for use when portable coverage is being tested.

The TYPHON equipment will be mounted inside the test vehicle (standard passenger vehicle for single BER measurements, or SUV/van for multiple BER measurements) with an external antenna(s) mounted on the outside and centrally located on the vehicle's roof, with no other equipment installed on the roof. For portable outdoor coverage verification, the variable attenuator will be set to a 10 dB level to account for portable body losses.

Prior to taking BER measurements, each site must be audited to verify that the radio system is operating properly. The audits will verify the antenna configuration, the power into the antenna, the antenna installation, and the frequency of the test transmitter. Harris shall provide all test equipment necessary to perform the audits.

5.2 Drive Route Planning

TSB-88-C recommends coverage verification measurements at a statistically significant number of random test locations, uniformly distributed throughout the service area. To accomplish this, the service area is divided by a grid pattern as an aid to the development of a drive test route with an approximately equal distance traveled in each grid.

Harris recommends a 1-mile by 1-mile grid pattern to obtain an even or uniform distribution of approximately 4000 grids throughout County's service area. The grid pattern is overlaid onto street maps and a drive test route determined that will pass through all accessible grids (i.e. have roads) within County's defined service area boundary. The drive route should pass through each grid at least once but not more than twice, as far as is practically possible. The defined drive route should not pass through tunnels, underpasses, underground garages, or other man made obstructive areas where radio coverage is not planned or expected. If a drive route passes through any of these areas, the TYPHON unit is disabled to prevent the collection of data in these areas.

BER measurements will be made in all accessible grids within County's defined service area boundary.

5.3 Data Measurements

Each radio system base station site transmits the data sequences on a working channel, and measurements of this signal are collected with the TYPHON equipment mounted inside the test vehicle as it is driven along the defined test drive route. The software in the TYPHON laptop computer will automatically measure and record the data sequences that will be used to determine the BER for each measurement point along the drive route.

5.4 Data Analysis and Acceptance

All BER measurement data records collected from the drive within the defined service area boundary are post-processed and used in the final analysis.

Measurements that have a BER equal to or better than 2% are expected to have a DAQ of 3.4 or greater.

5.5 Results Presentation

The data records are plotted on a map showing the test grids, the areas measured and the characterization results. Different pen colors are used to show ranges of measured BER. A report is also provided that summarizes the characterization results.

Results

Characterizer: _____	Date: _____
Comments: _____	

6. *COVERAGE CHARACTERIZATION - PORTABLE OUTDOOR VOICE QUALITY*

This procedure is used by Harris to characterize coverage based on the evaluation of portable outdoor analog or digital voice quality on a limited basis, specifically at 250 pre-designated, mutually-agreeable locations. This procedure will be used to characterize voice quality in the County's defined service area.

The Telecommunications Industry Association (TIA) Telecommunications Systems Bulletin TSB-88-C, titled "Wireless Communications Systems - Performance in Noise and Interference-Limited Situations - Recommended Methods for Technology-Independent Modeling, Simulation, and Verification" has defined Channel Performance Criterion (CPC) as the specified minimum design performance level in a faded channel, and provides a set of Delivered Audio Quality (DAQ) CPCs that define subjective voice quality performance applicable to both analog voice and digital voice systems. These DAQ definitions are provided in Table 1.

Table 1 - Delivered Audio Quality Scale Definitions

Delivered Audio Quality	Subjective Performance Description
DAQ 5.0	Speech easily understood.
DAQ 4.5	Speech easily understood. Infrequent Noise/Distortion.
DAQ 4.0	Speech easily understood. Occasional Noise/Distortion.
DAQ 3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion.
DAQ 2.0	Understandable with considerable effort. Frequent repetition due to Noise/Distortion.
DAQ 1.0	Unusable, speech present but unreadable.

RF coverage using this procedure is characterized by evaluating the voice quality of digital voice calls to/from a portable radio at locations throughout County's defined service area. At each location, a call is placed from the portable user to the dispatcher (an inbound call), as well as from the dispatcher to the portable user (an outbound call). The inbound and outbound call at each location is evaluated using the DAQ definitions in Table 1.

6.1 Equipment and Preparation

Portable radios from County's existing inventory will be used for the voice quality calls. The portable radio will be at head level and will not use a shoulder-mounted speaker/microphone.

Prior to performing the portable outdoor voice quality characterization, each site must be audited to verify that the radio system is operating properly. The audits will verify the antenna configuration, the power into the antenna, the antenna installation, and the

frequency of the test transmitter. Harris shall provide all test equipment necessary to perform the site audits.

6.2 Drive Route Planning

TSB-88-C recommends coverage verification at a statistically significant number of random locations, uniformly distributed throughout the service area. To accomplish this, the service area is divided by a grid pattern as an aid to planning. Harris and the County will agree mutually to 250 characterization locations within County's defined service area boundary.

The portable outdoor voice quality characterization is conducted at a randomly selected location within each grid, typically as close to the center of the grid as possible. To the extent possible, locations in adjacent grids should not be clustered closer to one another than $100\lambda^1$. All calls will be made with the portable operator at street level outside any vehicle or other enclosure such as buildings, tunnels, underpasses, underground garages, or other man made obstructive areas where radio coverage is not planned or expected.

6.3 Voice Quality Evaluation

Portable outdoor digital voice quality characterization requires two Harris representatives and two County representatives. One Harris and one County representative will be the Field team, travel the drive route, step outside of the vehicle at the agreed upon locations, perform the inbound calls, and evaluate the outbound calls. The second Harris and County representatives will be the Base team, will remain at the dispatch location, evaluate the inbound calls, and perform the outbound calls.

At each agreed upon location, with the Field team representatives outside of the vehicle, the portable to dispatch (inbound) and the dispatch to portable (outbound) calls are performed. Per TSB-88-C, if the message is not understood on the first attempt the portable user is allowed to move 3-feet in any direction and the calls can be repeated one time.

The portable digital voice quality characterization calls within each grid consist of a short message representative of typical public safety call duration's and includes the identification of the location being tested. The suggested inbound message is "GRID NUMBER XXX", followed by a short sentence or two from a newspaper or periodical such as "USA Today". To ensure that the message is understood, the dispatcher then repeats the inbound message. The dispatcher will then make a similar outbound call. The suggested outbound message is "CONFIRMING GRID XXX", followed by a different short sentence or two from a newspaper or periodical such as "USA Today". The field team will then repeat the dispatcher's outbound message.

Each of the four representatives evaluates the calls using the Table 1 DAQ definitions and records the DAQ score for each location using the template in Table 2. A DAQ score is made separately for the inbound and outbound calls at each location based on the DAQ score from both evaluators for each call direction.

¹ Approximately 125-ft at 800 MHz, 245-ft at UHF and 650-ft at VHF.

6.4 Analysis and Presentation

Characterization reports will be provided that include:

- the number of grids
- the location within each grid
- a copy of the Table 2 inbound or outbound evaluation template used by each evaluator
- the DAQ score for each grid/location for each call direction

Table 2 – Portable Outdoor Voice Quality Evaluation Template

Coverage Characterization for: County of Los Angeles

Date: _____

Check the link used: ☐ analog or digital Voice ☐ Base to Portable (outbound)
☐ Portable to Base (inbound)

Harris Evaluator:	County Evaluator:
Organization:	Organization:
Test Radio:	Test Frequency:

[illegible]

(One row for each grid/location)

Attachment E
T1_Public Safety Leased T1 Specification
Rev: B
Date: December 5, 2011

PREPARED Brian Munson	PHONE (434) 455 - 9280	DATE 12/5/2011 10:02:00 AM	REV B	DOCUMENT NO. WSBU/SE/KBM/0001
APPROVED	CHECKED	YOUR DATE	FILE / REFERENCE T1_Public Safety Leased T1 Specification Rev B.docx	

1.0 Scope of Document

This document defines the required operational and reliability parameters of a leased T1, 1.544 MB circuit, for backhaul of the Harris EDACS and P25 simulcast communications systems.

This document is intended to cover *Telephone Company (Central Office)* leased or rented T1 phone circuits whether these leased lines are SONET, point-to-point, microwave, fiber, and/or copper.

2.0 Technical Requirements Abstract

The P25/EDACS GPS simulcast system operates in a synchronized office environment. In summary, 9600 bps synchronous signals must always be transmitted from the control point and arrive at the transmit site within 0.6 microseconds based on a synchronized GPS standard. This GPS standard maintains synchronization within a 0.5 nanoseconds GPS clock.

In summary, any signal transmitted on one end of the leased T1 circuit must always arrived at the receive end of the T1 within 0.6 microseconds using the same (transmit/receive end) GPS clock standard accurate to within GPS 0.5 nanoseconds standard.

This standard must be extended to all transmit sites in a single control point cell configuration.

3.0 Technical Requirements

To ensure the proper T1 data-grade circuit is obtained when leasing a telephone line, the T1 circuit must meet the following specifications:

- a) End to End Reliability $\geq 99.9999\%$ (guaranteed). This reliability criteria shall 24/7/365 operations, downtime due to traffic reroute, downtime due to cut or inoperable lines, and maintenance down time to any leased T1 equipment or equipment effecting the leased T1 circuits,
- b) Maximum Bulk Delay $\leq 12\text{ms}$ (Simulcast specs $< 30\text{ uS}$ for site links).
- c) BER $\leq 10^{-6}$ (10⁻¹⁰ is preferred).
- d) Jitter $\leq 60\text{ms}$ (Simulcast specs $< 50\text{ uS}$ for site links).
- e) Data Rate 1.544 Mbps $\pm 50\text{ ppm}$ when loop or thru timed.
- f) GPS standard T1 Clocked from end to end.

PREPARED Brian Munson	PHONE (434) 455 - 9280	DATE 12/5/2011 10:02:00 AM	REV B	DOCUMENT NO. WSBU/SE/KBM/0001
APPROVED	CHECKED	YOUR DATE	FILE / REFERENCE T1_Public Safety Leased T1 Specification Rev B.docx	

- g) Framing = ESF.
- h) Line Coding = B8ZS.
- i) Frequency Response: 1000 Hz Reference
- j) DSO circuit specification: 500 - 2400 Hz -1 to +3 dB
- k) DSO circuit specification: 300 - 2700 Hz -2 to +6 dB
- l) Maximum Frequency Error = ± 5 Hz
- m) Maximum Net Loss = 16 dB
- n) Maximum Group Delay (800-2400 Hz) = 2000 micro seconds
- o) Minimum S/N Ratio = 24 dB
- p) Installation of isolation/surge protector for each phone line connected with to the P25/EDACS equipment.
- q) Maximum circuit delay shall not exceed 29,995 microseconds
- r) Rate of Reroute: No reroutes allowed
- s) The T1 paths shall be capable of transporting the GPS based MUX clock from end to end of the link
- t) Circuit BER shall be 10^{-10}

4.0 T1 Customer Interface Equipment (Multiplexer) Specifications

4.1 T1 Outputs

- a) Interface: DSX-1 Interface per ANSI T1.403-1989
- b) Rate: 1.544 Mbps +/- 750 ppm using internal timing
- c) Pulse Shape: Per ANSI T1.403-1989
- d) Formats: Extended Superframe (ESF) per AT&T 62411
- e) Line Codes: Bipolar with 8 Zero Substitution (B8ZS), Alternate Mark Inversion (AMI)

PREPARED Brian Munson	PHONE (434) 455 - 9280	DATE 12/5/2011 10:02:00 AM	REV B	DOCUMENT NO. WSBU/SE/KBM/0001
APPROVED	CHECKED	YOUR DATE	FILE / REFERENCE T1_Public Safety Leased T1 Specification Rev B.docx	

f) Protection: T1 Outputs are transformer-isolated. Outputs do not have secondary center taps

g) Output Jitter: Unless otherwise specified, less than 0.05 UI per AT&T PUB 62411

h) Connector: RJ-48 on the MA215 Module of the Harris Interplex multiplexer

4.2 T1 Inputs

a) Input Impedance: 100 ohms resistive (nominal)

b) Rate: 1.544 Mbps +/- 750 ppm using internal timing

c) Pulse Shape: Per ANSI T1.403-1989

d) Formats: Extended Superframe (ESF) per AT&T 62411

e) Line Codes: Bipolar with 8 Zero Substitution (B8ZS), Alternate Mark Inversion (AMI)

f) Protection: T1 Inputs are transformer-isolated. Outputs do not have secondary center taps

g) Connector: RJ-48 on the MA215 Module of the Harris Interplex multiplexer

h) Frame Synchronization: Proprietary frame synchronization algorithm for high tolerance transmissions

i) Average Reframe Time: 17.5 ms for ESF

j) Dynamic Range: +3 dB to – 6dB relative to the nominal DSX-1 level

k) Equalization: Inputs will accept T1/DS1 signals up to 655 feet from the DSX-1 or equivalent interface point.

l) Jitter Tolerance: Greater than 28 UI at 10 Hz, exceed AT&T PUB 62411

m) Jitter Attenuation: Greater than 20 dB at 50 Hz, exceeds AT&T PUB 62411

PREPARED Brian Munson	PHONE (434) 455 - 9280	DATE 12/5/2011 10:02:00 AM	REV B	DOCUMENT NO. WSBU/SE/KBM/0001
APPROVED	CHECKED	YOUR DATE	FILE / REFERENCE T1_Public Safety Leased T1 Specification Rev B.docx	

5.0 Special Considerations

To ensure the proper data-grade T1 circuit operations to the P25/EDACS simulcast equipment, the following conditions shall be met:

- a) The leased T1 lines shall operate in "Building Integrated Timing Supply (BITS) Interoffice Synchronization"
- b) Lease lines shall be dedicated and point-to-point with no rerouting for any reason, especially during loading or maintenance.
- c) Leased T1 line equipment (provided by the *Telephone Company*) shall use GPS standards to provided clock signaling.
- d) If using a SONET network, no measurable jitter and wondering can be induced from the VT pointer justification.
- e) Due to the retiming algorithm in the Harris P25/EDACS Simulcast T1 multiplexing equipment, the leased T1 lines shall be capable of accepting, without alarming, +/- 750 Hz frequency deviations in the T1 1.544 MHZ data stream. The leased T1 lines must stay on-line during these deviations. It is clearly understood that this deviation is outside the standard T1 specifications.
- f) The leased T1 lines shall provide 99.9999% reliability end-to-end. This reliability shall include end-to-end GPS synchronization to 0.6 microseconds.
- g) All leased T1 equipment must be clocked, carrier controlled (+/- 1 Hz), and timed to GPS standards outline in this document.

6.0 Central Telephone Office T1 Testing Specifications and Procedures

Installed leased T1 circuits shall be bit error tested, to 99.9999% reliability, using the T1 test sets capable of being clocked and synchronized to the HARRIS P25 /EDACS GPS ageless oscillator output signals.

Performing BER testing, on the leased T1 circuit, not using this test setup will invalidate BER test data.

Customer BER testing and path acceptance criteria will be based on the stability and jitter of the control point recovered GPS composite reference measured at each transmit site.

Appendix A

Existing CWIRS EDACS System

1. Overview - Basis for P25 Migration

1.1 EDACS Trunked Simulcast Systems

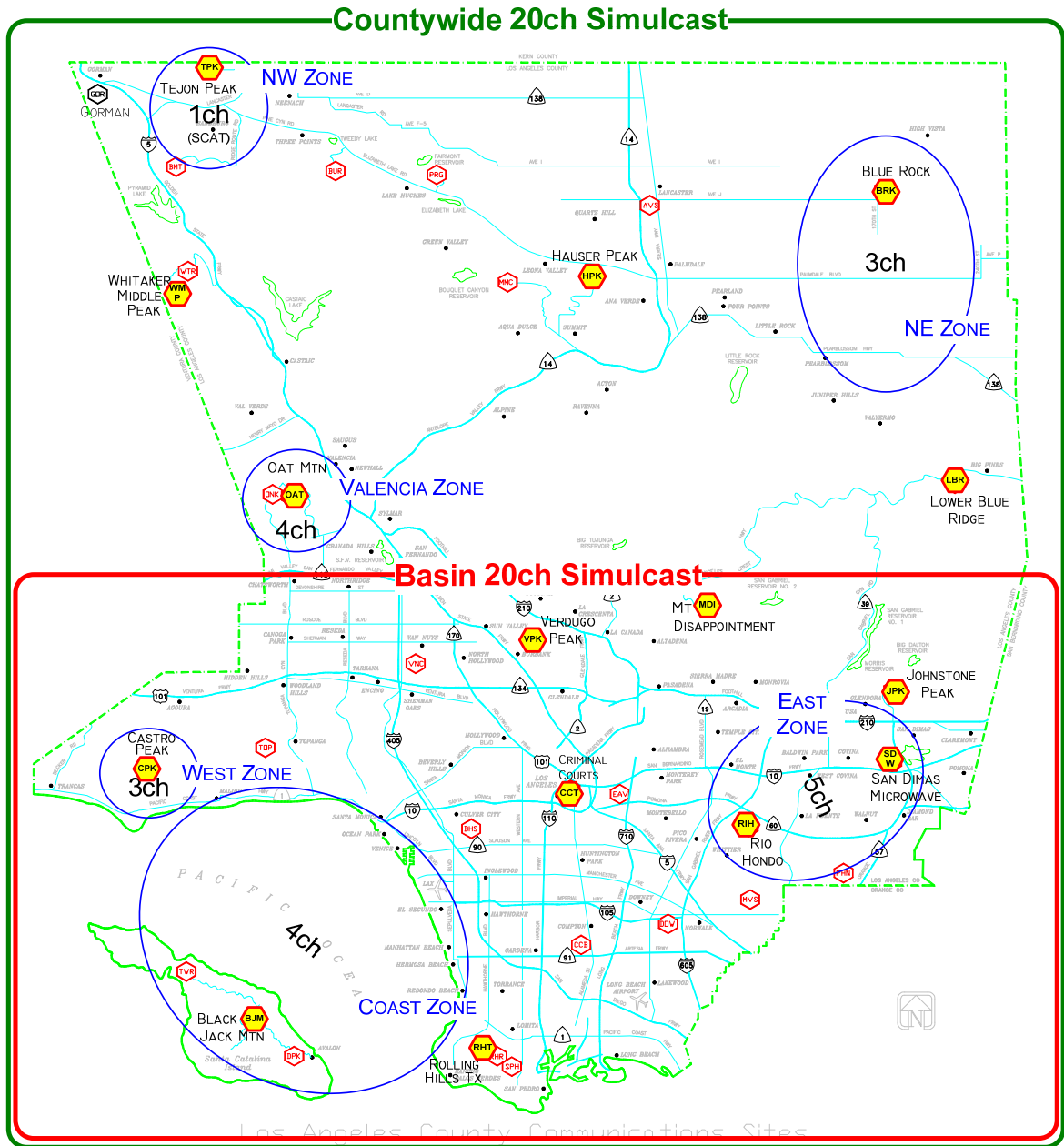
CWIRS' Trunked Simulcast communication is provided by two independent but interconnected Harris 800 MHz EDACS systems comprising of:

- A 20-channel countywide system, deployed at seven hilltop sites and one downtown LA building, providing radio coverage for the entire County of Los Angeles.
- A 20-channel Basin System, deployed at five hilltop sites and one downtown LA building, providing radio coverage and additional traffic capacity for the densely populated southern half of Los Angeles County, including San Gabriel Valley and San Fernando Valley.

Figure 1 illustrates the sites and general service areas applicable to each simulcast system. Note that the "coverage" rectangles and circles are intended only to roughly depict target coverage areas and should not be taken literally. Note also that Catalina Island's offshore location is not to scale nor bearing as it has been compacted to conserve page space.

A "Receive-Only" site is located atop the Criminal Courts Building in downtown Los Angeles, where 20 receivers for the Basin System serve to enhance reception from subscriber units transmitting from difficult coverage areas such as those blocked by the high-rise buildings. Rolling Hills Transmit houses a receive site for the Countywide system in addition to transceivers for the Basin System.

Figure 1. CWIRS Site/System Configuration and Target Coverage Areas



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All sites are linked by the County's digital microwave to the CWIRS "Hub" site at the Eastern Avenue Microwave facility (EAV). All subscriber (inbound) transmissions received at the radio sites congregate at EAV where they are voted to determine and select the best usable signal, which is then routed back to the radio sites for simulcast retransmission (outbound).

Each 20-channel system functions independently. However, through the use of Harris Integrated Multisite Controller (IMC) located at EAV, subscribers assigned to either the Basin or the Countywide system can communicate “seamlessly” with each other.

By necessity, simulcast transmitters for a given radio channel are maintained on precisely the same frequency. This is accomplished by the use of high-accuracy, high-stability rubidium frequency standards at each of the simulcast transmitter sites. Additionally, all microwave / multiplex equipment at the sites is synchronized to a single 1.544 MBit/sec timing source at EAV. Equalization networks are used for the audio to ensure that phase-coherent signals are received in the simulcast coverage overlap areas. Careful alignment of the simulcast systems is required on initial commissioning to ensure optimal coverage performance, and again periodically to compensate for slight drifts in equipment parameters or seasonal changes in propagation conditions. Although the Basin and Countywide systems each share timing references and microwave links at a given site, interoperating traffic between the two systems at that site is always first processed through the receiver voters, the IMC, and the simulcast conditioning / distribution equipment at EAV.

The Basin and Countywide Simulcast systems use Harris MASTR IIe Base Station Repeaters. Figure 17 shows the deployment and quantity of these radios by site and system.

Under fully operational conditions, trunking control of the Base Stations is performed by the Site Controllers at EAV, one for the Basin system and one for the Countywide system. Control of the Base Stations is performed by GE Trunking Cards (GETCs), which handle the transmissions to and from the Site Controllers and control the station PTT, Tx Mute, etc.

In addition to Harris base station and trunking equipment at the site, RF combining and radiating elements – comprising TX/RX Systems 6-port Transmitter Cavity Combiners, TX/RX Systems Receiver Multicouplers, and directional / omni-directional antennas from various manufacturers – comprise the main elements of the site equipment.

In 2012, the County also procured a Harris VIDA switch and an assortment of VIDA-related equipment including the following:

- High-Availability VIDA Network Switching Servers
- VIDA ISSI Gateway
- Two IP Simulcast Control Points
- Two VIDA Interoperability Gateways with 12-ports each (24 total)
- EDACS-IP Gateway
- Six C3 Maestro^{IP} consoles
- Two V^{IP} Consoles
- Exacom Logging Recorder

The County installed the VIDA network switch and associated simulcast control equipment at Eastern Avenue in 2012. The P25 Rebanding Program therefore must account for the equipment previously installed as to avoid unnecessary duplication. The County has not installed any P25 site equipment related to CWIRS.

1.2 Trunked Multisite Systems

To enhance coverage in selected geographical areas – known as zones – seven additional non-simulcast EDACS trunked systems are deployed. Collectively, these are referred to as “multisite” systems, and they each comprise a single transceiver site and, in one instance, an associated receiver site. Figure 1 illustrates the sites and general service areas applicable to each of the zones, with each zone acting as an underlay to the trunked system overlays. Note that the “coverage” ellipses are intended only to roughly depict target coverage areas and should not be taken literally.

Harris MASTR III Base Station repeaters and receivers are used for the multisite systems. Figure 2 shows the deployment and quantity of these radios by site and zone.

The multisite systems are all fully integrated into the total CWIRS network via microwave and the IMC such that radios on any given talkgroup and wherever they are in the County will automatically monitor other CWIRS radio traffic occurring on that talkgroup.

Trunking control of the base stations is performed by a dedicated Site Controller at each of the zone transmitter sites. GE Trunking Cards (GETCs) associated with each base station handle the transmissions to and from the Site Controller and control the station PTT, Tx Mute, etc. In the event of microwave failure, the affected zone continues as a stand-alone trunked radio system but loss of connectivity to the IMC precludes interoperability with the simulcast or other multisite systems. In the event of Site Controller failure, the GETCs assume the trunking role and the site falls back to a preset configuration or “Failsoft” mode of operation. Newer multisites use Site Interface Modules (SIM) instead of the dated Site Controller.

As with the simulcast systems described above, all zone sites are linked by the County’s digital microwave and/or fiber optic cable network to the CWIRS “Hub” site at the EAV where the IMC resides and, where satellite receivers are involved, subscriber (inbound) transmissions are voted to determine and select the best usable signal for routing and (outbound) retransmission on the appropriate simulcast and/or zone system transmitters. The VIDA network equipment interconnects with the EDACS IMC at the EAV via the EDACS IP Gateway. The rebanding program will leverage the EDACS IP Gateway to assist in user migration from EDACS to P25. Once the migration is complete, the County may leave the EDACS IP Gateway in place or decommission it as desired.

Figure 2. CWIRS Radio Systems – Site / Radio Deployment

System Type >		Trunked Simulcast			Trunked Multisite						
Service Area >		Basin	County wide		East Zone	Coastal Zone	West Zone	Valencia Zone	FWY 14 Zone	NW Zone	NE Zone
		(BA)	(CW)		(EZ)	(CZ)	(WZ)	(VZ)	(FWY14)	(NWZ)	(NEZ)
		Transceivers									
Radio Site / Abbreviation		Mastr II		Mastr III	Mastr III						
Black Jack Mt.	BJM					4					
Blue Rock	BRK										3
Criminal Courts	CCT										
Castro Peak	CPK	20	20				3				
Hauser Peak	HPK		20								
Johnstone Peak	JPK	20	20								
Lower Blue Ridge	LBR		20								
Mt. Disappointment	MDI	20	20								
Oat Mt.	OAT							4			
Rolling Hills Transmit	RHT	20									
San Dimas	SDW				5						
Tejon Peak	TPK									1	
Verdugo Peak	VPK	20	20								
Whitaker Middle Peak	WMP		20								
Total Transceivers		100	140		5	4	3	4	0	1	3
		Receivers									
Radio Site / Abbreviation		Mastr II		Mastr III	Mastr III						
Criminal Courts	CCT	20	20								
Castro Peak	CPK					4					
Rolling Hills Transmit	RHT			20		4					
Rio Hondo	RIH				5						
Verdugo Peak	VPK										
Topanga Peak	TOP										
Total Receivers		20	20	20	5	8			0		

1.3 Frequencies

Figure 3 lists all 800 MHz frequencies used by the County's trunked radio systems.

Figure 3. LA County's 800 MHz Frequency List for Trunked CWIRS

Rx frequencies are 45 MHz down from corresponding Tx frequencies

CWIRS Trunked Frequencies (Base Transmit – MHz)			
866.0625	866.7750	867.5875	868.2750
866.0875	866.8000	867.7250	868.3000
866.2125	866.9375	867.7500	868.4375
866.2250	866.9625	867.7750	868.5875
866.2500	867.0625	867.8000	868.6125
866.2750	867.0875	867.9375	868.7250
866.3000	867.2250	867.9625	868.7500
866.4375	867.2500	868.0625	868.7750
866.5875	867.2750	868.0875	868.8000
866.7125	867.3000	868.2125	868.8375
866.7250	867.3125	868.2250	868.9125
866.7500	867.4375	868.2500	

In addition to its 47 CWIRS/NPSPAC frequencies, the County is licensed on and maintains CWIRS interoperability with:

- Three 800 MHz frequencies (one of which is in the Channel 1-120 group and one in the expansion band) used for conventional, non-simulcast communications in small cells,
- Four temporary location NPSPAC frequencies for experimental and emergency operation in conventional mode.

Figure 4. LA County's 800 MHz Frequency List for Conventional Stations

Rx frequencies are 45 MHz down from corresponding Tx frequencies

CWIRS Conventional Frequencies (Base Transmit – MHz)
852.3125
858.2625
860.2625
866.9500
867.0750
867.9500
868.0750

Call signs associated with the frequencies delineated in Figures 3 and 4 are listed in Figure 5 **Error!**
Reference source not found..

Figure 5. CWIRS Trunked System Call Signs

Call Sign	Service Code	Expiration Date	Licensee Name
WNNM901	YF	3/20/2015	Los Angeles, County of
WNNM902	YF	3/20/2015	Los Angeles, County of
WNNM904	YF	3/20/2015	Los Angeles, County of
WNNM905	YF	3/20/2015	Los Angeles, County of
WNNM906	YF	4/30/2015	Los Angeles, County of
WNNM907	YF	3/20/2015	Los Angeles, County of
WNNM908	YF	8/18/2014	Los Angeles, County of
WNNM909	YF	3/29/2015	Los Angeles, County of
WNNM912	YF	4/30/2015	Los Angeles, County of
WNZY866	YF	7/29/2022	Los Angeles, County of
WNZY867	YF	7/29/2022	Los Angeles, County of
WPHY854	YF	11/28/2015	Los Angeles, County of
WPPX548	YF	2/28/2015	Los Angeles, County of

Call Sign	Service Code	Expiration Date	Licensee Name
WPTQ630	YF	11/26/2021	Los Angeles, County of
WPUK518	YF	3/21/2022	Los Angeles, County of
WQGS660	YF	11/28/2012	Los Angeles, County of

The County has allocated each of the aforementioned trunked frequencies in Figure 3 to given sites per the licenses outlined in FIGURE 6. The tables below summarize the allocation of frequencies per site or groups of sites, including the current (old) transmit frequencies, the offset between channels (important for combining), the old receive frequencies, the new transmit frequencies (from reconfiguration), and the new receive frequencies (from reconfiguration).

Figure 6. CWIRS Frequencies by Sites (Countywide Simulcast)

Sites: Criminal Courts, Castro Peak, Johnstone Peak, Mt. Disappointment, Mt. McDill, Rolling Hills Transmit*, Lower Blue Ridge, Verdugo Peak, Whitaker Middle Peak.*

** Criminal Courts and Rolling Hills Transmit are RX-only for Countywide*

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
1	866.0875	821.0875		851.0875	806.0875
2	866.2500	821.2500		851.2500	806.2500
3	866.2750	821.2750		851.2750	806.2750
4	866.3000	821.3000		851.3000	806.3000
5	866.5875	821.5875		851.5875	806.5875
6	866.7750	821.7750		851.7750	806.7750
7	866.8000	821.8000		851.8000	806.8000
8	866.9375	821.9375		851.9375	806.9375
9	867.2250	822.2250		852.2250	807.2250
10	867.2500	822.2500		852.2500	807.2500
11	867.2750	822.2750		852.2750	807.2750
12	867.7250	822.7250		852.7250	807.7250
13	867.7750	822.7750		852.7750	807.7750
14	867.8000	822.8000		852.8000	807.8000
15	868.0875	823.0875		853.0875	808.0875
16	868.2500	823.2500		853.2500	808.2500
17	868.2750	823.2750		853.2750	808.2750
18	868.7250	823.7250		853.7250	808.7250
19	868.7750	823.7750		853.7750	808.7750

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
20	868.8000	823.8000		853.8000	808.8000

Figure 7. CWIRS Frequencies by Sites (Basin Simulcast)

Sites: Criminal Courts, Castro Peak, Johnstone Peak,
Mt. Disappointment, Rolling Hills Transmit, Verdugo Peak*

** Criminal Courts is Rx-only for Basin*

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
1	866.0625	821.0625		851.0625	806.0625
2	866.4375	821.4375		851.4375	806.4375
3	866.7250	821.7250		851.7250	806.7250
4	867.0625	822.0625		852.0625	807.0625
5	867.5875	822.5875		852.5875	807.5875
6	867.9375	822.9375		852.9375	807.9375
7	868.2250	823.2250		853.2250	808.2250
8	866.2250	821.2250		851.2250	806.2250
9	866.7500	821.7500		851.7500	806.7500
10	867.0875	822.0875		852.0875	807.0875
11	867.4375	822.4375		852.4375	807.4375
12	867.7500	822.7500		852.7500	807.7500
13	868.0625	823.0625		853.0625	808.0625
14	868.2500	823.2500		853.2500	808.2500
15	868.4375	823.4375		853.4375	808.4375
16	868.5875	823.5875		853.5875	808.5875
17	866.9625	821.9625		851.9625	806.9625
18	867.3000	822.3000		852.3000	807.3000
19	867.9625	822.9625		852.9625	807.9625
20	868.3000	823.3000		853.3000	808.3000

Figure 8. CWIRS Frequencies by Sites (Northeast Zone)

Sites: Blue Rock

Channel #	Old TX Frequency (MHz)	Old RX Frequency (MHz)		New TX Frequency (MHz)	New RX Frequency (MHz)
1	868.6125	823.6125		853.6125	808.6125
2	868.8375	823.8375		853.8375	808.8375
3	868.9125	823.9125		853.9125	808.9125

Figure 9. CWIRS Frequencies by Sites (Valencia Zone)

Sites: Oat Mountain (Valencia Zone)

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
1	866.2125	821.2125		851.2125	806.2125
2	866.7125	821.7125		851.7125	806.7125
3	867.3125	822.3125		852.3125	807.3125
4	868.2125	823.2125		853.2125	808.2125

Figure 10. CWIRS Frequencies by Sites (East Zone)

Sites: San Dimas, Rio Hondo (East Zone). East Zone re-uses Basin Frequencies.*

**Rio Hondo is Rx-only for East Zone*

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
1	866.2500	821.2500		851.2500	806.2500
2	866.7250	821.7250		851.7250	806.7250
3	867.3000	822.3000		852.3000	807.3000
4	868.2250	823.2250		853.2250	808.2250
5	868.7500	823.7500		853.7500	808.7500

Figure 11. CWIRS Frequencies by Sites (Coastal Zone)

Sites: Black Jack Mountain (Coastal Zone)

** Black Jack Mountain frequencies re-used from Basin channels until permanent channels obtained. Channel search is currently underway.*

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
1	866.9625	821.9625		851.9625	806.9625
2	867.9625	822.9625		852.9625	807.9625
3	867.0625	822.0625		852.0625	807.0625
4	868.0625	823.0625		853.0625	808.0625

Figure 12. CWIRS Frequencies by Sites (Northwest Zone)

Sites: Tejon Peak (Northwest Zone)*

** Northwest Zone re-uses Basin frequencies*

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
1	868.3000	823.3000		853.3000	808.3000

Figure 13. CWIRS Frequencies by Sites (West Zone)

Sites: Castro Peak (West Zone)*

** West Zone frequencies re-used from Basin channels until permanent channels obtained. Channel search is currently underway.*

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
1	866.7500	821.7500		851.7500	806.7500
2	867.0875	822.0875		852.0875	807.0875
3	867.5875	822.5875		852.5875	807.5875

Figure 14. CWIRS Frequencies by Sites (FWY14 Zone)*

Sites: Hauser Peak (Freeway 14 Zone)*

** Freeway 14 Zone (SCAT) at Hauser Peak is decommissioned until the Countywide simulcast suite currently at Hauser Peak is moved back to Mt. McDill. The Freeway 14 SCAT will remain decommissioned for the duration of the reconfiguration project. Therefore, Freeway 14 Zone is not part of reconfiguration.*

Channel #	Old Tx Frequency (MHz)	Old Rx Frequency (MHz)		New Tx Frequency (MHz)	New Rx Frequency (MHz)
1	868.7500	823.7500		853.7500	808.7500

Figure 15. CWIRS Trunked Channels by Site

Channel #	Old TX Frequency (MHz)	Site														
		CPK	CCT	JPk	VPK	RHT	MDI	HPK	LBR	WMP	BJM	SDM	RIH	TPK	OAT	BRK
1	866.0875	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
2	866.2500	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
3	866.2750	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
4	866.3000	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
5	866.5875	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
6	866.7750	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
7	866.8000	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
8	866.9375	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
9	867.2250	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
10	867.2500	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
11	867.2750	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
12	867.7250	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
13	867.7750	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
14	867.8000	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
15	868.0875	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
16	868.2500	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
17	868.2750	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
18	868.7250	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
19	868.7750	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
20	868.8000	T	R	T	T	R	T	T	T	T	-	-	-	-	-	-
21	866.0625	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
22	866.4375	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
23	866.7250	T	R	T	T	T	T	-	-	-	-	T	R	-	-	-
24	867.0625	T	R	T	T	T	T	-	-	-	T	-	-	-	-	-
25	867.5875	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
26	867.9375	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
27	868.2250	T	R	T	T	T	T	-	-	-	-	T	R	-	-	-
28	866.2250	T	R	T	T	T	T	-	-	-	-	T	R	-	-	-
29	866.7500	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
30	867.0875	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
31	867.4375	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
32	867.7500	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
33	868.0625	T	R	T	T	T	T	-	-	-	T	-	-	-	-	-
34	868.7500	T	R	T	T	T	T	-	-	-	-	T	R	-	-	-
35	868.4375	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
36	868.5875	T	R	T	T	T	T	-	-	-	-	-	-	-	-	-
37	866.9625	T	R	T	T	T	T	-	-	-	T	-	-	-	-	-
38	867.3000	T	R	T	T	T	T	-	-	-	-	T	R	-	-	-
39	867.9625	T	R	T	T	T	T	-	-	-	T	-	-	-	-	-
40	868.3000	T	R	T	T	T	T	-	-	-	-	-	-	T	-	-
41	868.6125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T
42	868.8375	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T
43	868.9125	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T
44	866.2125	-	-	-	-	-	-	-	-	-	-	-	-	-	T	-
45	866.7125	-	-	-	-	-	-	-	-	-	-	-	-	-	T	-
46	867.3125	-	-	-	-	-	-	-	-	-	-	-	-	-	T	-
47	868.2125	-	-	-	-	-	-	-	-	-	-	-	-	-	T	-
Key																
R		Receive Only														
T		Transmit/Receive														

1.4 Radio Terminals

CWIRS is a single integrated radio system that is accessible to a large number of users in a variety of different, independent departments. A list of these departments is provided in Figure 16. The existing systems use Harris' EDACS radios to provide the extended features and benefits of trunking technology, such as automatic frequency assignment, and allowing autonomous, private conversations to take place between individuals or between members of a group without interfering with other groups. The new radio system will allow users to communicate with EDACS users and P25 users during the transition to minimize downtime and provide transparency to the end-user as to the system upgrade. Each radio will support P25 Phase 1 and EDACS modes concurrently.

Field units use mobile and portable radios to communicate over the radio system, while dispatch operators use RF control stations, mobile relay operation, communication control consoles or desk-top control units.

A disaster coordination configuration is preset into every user's radio which allows them to access, monitor and participate in common countywide transmissions. Some units are programmed with access to the California State controlled Mutual Aid repeaters and/or other sister agency radio systems, should there be a need for interoperability with non-CWIRS users.

Figure 16. CWIRS Subscriber Agencies and Departments

#	Agency / Department	#	Agency / Department
1	County Administration	20	Public Library
2	AG Comm/Weights and Measures	21	Public Social Services
3	Animal Care and Control	22	Public Works
4	Beaches and Harbors	23	Red Cross
5	Board of Supervisors	24	Registrar Recorder
6	Children and Family Services	25	Sanitation - Solid Waste
7	Children Medical Services	"	Sanitation - Water Waste
8	Community and Senior Citizen Services	26	LA County Sheriff (Interoperability)
9	Coroner	27	Temple City
10	District Attorney	28	State Parole
11	Fire - F & FW	29	Health Hazmat
12	Glendora Transportation	30	ISD - Alterations and Improvements
13	Health Services	"	ISD - Communication Systems Support
14	Mental Health	"	ISD - Custodial Services
15	Museum of Art	"	ISD - Customer Assistance Division
16	Museum of Natural History	"	ISD - Dept-Wide Programs Division
17	Office of Public Safety - Admin	"	ISD parking Services
"	Office of Public Safety - Facilities	"	ISD - Maintenance and Operations

#	Agency / Department	#	Agency / Department
"	Office of Public Safety - Health	"	ISD - Network Services Division
"	Office of Public Safety – Parks	"	ISD - Premises Systems Division
18	Parks and Recreation	"	ISD - Radio Systems Division
19	Probation – JIB	"	ISD - Telecom Branch Admin
"	Probation - Main		

1.5 Communication Control

All communication and control signals to and from the radio sites are carried over the County's microwave backbone, the hub of which is the EAV. This facility also functions as CWIRS' Communication Control Center and contains the Basin and Countywide receiver voting subsystem, simulcast transmission control and conditioning equipment, trunking system controllers, the system manager and the Integrated Multisite Controller (IMC) for the EDACS system.

Communication control consoles and desktop control units are hard-wired to the Integrated Multisite Controller (IMC) and Central Site Controller (CSC). Communications control consoles are capable of operating on any CWIRS talkgroups or systems. The new P25 site equipment will connect to the existing VIDA network infrastructure at the EAV to minimize disruption to existing processes, logistics, and backhaul networks.

One of the most important features of CWIRS is interoperability with other County agencies. CWIRS interfaces with other County Public Safety radio systems, such as the Sheriff and Fire Systems. The County installed the VIDA network with conventional interfaces in 2012 to connect to the analog Sheriff and County Fire systems as necessary. Should Sheriff and/or County Fire move to a P25 platform, CWIRS P25 may connect to those systems via ISSI using the existing CWIRS ISSI Gateway.

1.6 Bi-Directional Amplifiers

CWIRS includes a total of 16 Bi-Directional Amplifiers (BDA) systems for the purposes of enhancing NPSPAC/trunked radio coverage in numerous parts of the County. These include Distributed Antenna Systems (DAS) of various sizes and complexities, comprising indoor radiating/non-radiating cable, fiber-optic cable, power splitters and antennas. However, two systems are used to extend coverage to isolated outdoor areas and use non-radiating cable and antenna(s) only.

These two CWIRS BDAs are manufactured by Cellular Specialties, Inc., are broadband, and do not require reconfiguration. All others are supplied by TX RX Systems, Inc., are sub-band limited and do require reconfiguration. Fiber Optic transport, where used in conjunction with the BDAs, is provided by Mobile Access/Foxcomm equipment, which does not require reconfiguration.

All BDA systems are designed and implemented to amplify CWIRS' current NPSPAC bands (821-824/866-869 MHz). While the active components are capable of amplification across the entire 800 MHz band, the built-in bandpass filter networks are specifically tuned for the current NPSPAC band and will therefore require reconfiguration in order to pass the new NPSPAC band.

The County of Los Angeles shall be responsible for reconfiguring the system's BDAs to support the new frequency plan.

Figure 17. Inventory of CWIRS 800 MHz Bi-Directional Amplifier Systems

Loc	Qty	Model	Frequency Sub-Band (MHz)	User/Location	Reconfiguration Required to Shift Operations to 806-809/ 851-854 MHz
1	1	61-89A-06-OLC-G1	821-824/ 866-869	(ISD Spare) 1110 NE Ave, LA	Yes
2	1	61-89A-06-OLC-G1	821-824/ 866-869	(ISD Spare) 1110 NE Ave, LA	Yes
3	1	61-89A-06-OLC-G1	821-824/ 866-869	(ISD Spare) 1110 NE Ave, LA	Yes
4	1	61-89A-50-A03-G1	821-824/ 866-869	DHS-Environment Health	Yes
5	1	61-89A-06-OLC-G1	821-824/ 866-869	ISD Admin Bldg, 1100 NE Ave, LA	Yes
6	1	61-89A-06-OLC-G1	821-824/ 866-869	ISD Telecom Bldg (Roof) 1110 NE Ave, LA	Yes
7	1	612-89A-02428-OLC-G1	821-824/ 866-869	ISD-Parking, Criminal Courts, 19th floor, LA	Yes
8	1	61-89A-06-OLC-G1	821-824/ 866-869	Parks & Rec, Castaic Lake Office, Castaic	Yes
9	1	61-89A-06-OLC-G1	821-824/ 866-869	Parks & Rec, Lake Hughes Rd, Castaic	Yes
10	1	61-89A-06-OLC-G1	821-824/ 866-869	LA Sanitation Dist, JAO, 1955 Workman Mill Rd, Whittier	Yes
11	3	61-89A-03181-G1	821-824/ 866-869	LA Sanitation Dist, JWPCP, 24501 S Figueroa, Carson	Yes
12	1	61-89A-50-A03-G1	821-824/ 866-869	LA Sanitation Dist, 5926 Sheila St, Commerce	Yes
13	1	BDA 110	806-824/ 851-869	LA Sanitation Dist, Canyon 4, 13130 Crossroads Pkwy S, Industry	No
14	1	BDA 110	806-824/ 851-869	LA Sanitation Dist, Canyon 4, 13130 Crossroads Pkwy S, Industry	No

1.7 Conventional Repeaters

CWIRS' Conventional Repeaters or "Small Cells" are used throughout the County to extend 800 MHz communications to users in important offices and facilities, as well as rural areas where CWIRS coverage is poor or non-existent. They operate on one of four available frequency pairs and employ different CTCSS tones to mitigate overlap interference between them.

When interfaced via landline and "Conventional Interface" to the CWIRS network, they become an integral part of the CWIRS trunked radio system. All Small Cell subscriber units are programmed to also operate directly on the CWIRS trunked network, thus providing not only wide area, half duplex communication throughout the county, but also providing interoperability with other agencies, an important feature should a major emergency or disaster occur. For this reason, the rebanding of these subscriber units will require careful planning and controlled transition to the new conventional channels and subsequently to the new (rebanding) CWIRS/NPSPAC channels. In this regard, it will be necessary to synchronize the rebanding of related Small Cells with the reconfiguration of all of the subscribers associated with those Small Cells.

The conventional frequencies are also used in Direct/Talk-around (Simplex) mode to provide short range communication for departments that have occasion to operate anywhere but locally in the County.

Harris worked a detailed re-banding plan in conjunction with the County to identify equipment and necessary courses of action to re-banding the 800 MHz conventional channels. The County of Los Angeles shall be responsible for reconfiguring the conventional channels as necessary.

Figure 18 provides a listing of Small Cell frequencies in use by CWIRS.

Figure 18. LA County's 800 MHz Frequency List for Conventional Stations

Base Rx Frequencies are 45 MHz below corresponding base Tx frequencies

CWIRS Conventional Frequencies
852.3125 / 807.3125
858.2625 / 813.2625
860.2625 / 815.2625
868.5875 / 823.5875

Figure 19 provides a listing of conventional station call signs.

Figure 19. CWIRS Conventional Station Call Signs

Call Sign	Service Code	Expiration Date	Licensee Name
KF0689	GP	11/19/2013	Los Angeles, County of
KNER447	GP	3/19/2022	Los Angeles, County of
KNER448	GP	3/19/2022	Los Angeles, County of
WPDV629	GP	11/29/2013	Los Angeles, County of
WPDV630	GP	11/29/2013	Los Angeles, County of
WPDV631	GP	11/29/2013	Los Angeles, County of
WPDV632	GP	11/29/2013	Los Angeles, County of
WPDV633	GP	11/29/2013	Los Angeles, County of
WPDV634	GP	11/29/2013	Los Angeles, County of
WPDV635	GP	11/29/2013	Los Angeles, County of
WPDV636	GP	11/29/2013	Los Angeles, County of
WPDV637	GP	11/29/2013	Los Angeles, County of
WPDV638	GP	11/29/2013	Los Angeles, County of
WPDV639	GP	11/29/2013	Los Angeles, County of
WPDV640	GP	11/29/2013	Los Angeles, County of
WPRR761	GP	1/1/2016	Los Angeles, County of
WZS448	GP	1/10/2014	Los Angeles, County of

Figure 20 provides an inventory of Small Cell Conventional Repeaters. All equipment is MASTR II and will be replaced in accordance with frequencies scheduled for replacement as determined by the 800 MHz Transition Administrator (800 TA). For the purposes of this Statement of Work, frequency pair 858.2625/813.2625 is assumed to be retained and not reconfigured. However, the County reserves the right to reconfigure the equipment associated with this channel should the 800 TA specify replacement frequencies.

Figure 20. Inventory of CWIRS 800 MHz Conventional Repeaters

Qty	Make/Model	Frequency (MHz)	User/Location	Rebanding Requirements
1	GE MASTR II TRX	852.3125/ 807.3125	OPS, H. Claude Hudson Med. Center, 2829 S. Grand Ave, LA	Reconfigure to 800 TA specified replacement Interleaved frequencies
1	GE MASTR II TRX	852.3125/ 807.3125	OPS, High Desert Hospital, 44900 N. 60th St W. Lancaster	Reconfigure to 800 TA specified replacement Interleaved frequencies
1	GE MASTR II	852.3125/	OPS, LAC-USC Med Center,	Reconfigure to 800 TA specified

Qty	Make/Model	Frequency (MHz)	User/Location	Rebanding Requirements
	TRX	807.3125	1200 N. State St. LA	replacement Interleaved frequencies
2	GE MASTR II RX	807.3125	OPS, LAC-USC Med Center, 1200 N. State St. LA	Reconfigure to 800 TA specified replacement Interleaved frequencies
1	GE MASTR II TRX	852.3125/ 807.3125	OPS, Long Beach Health Center, 1333 Chestnut St. Long Beach	Reconfigure to 800 TA specified replacement Interleaved frequencies
1	GE MASTR II TRX	852.3125/ 807.3125	OPS, Rancho Los Amigos, Downey	Reconfigure to 800 TA specified replacement Interleaved frequencies
1	GE MASTR II TRX	852.3125/ 807.3125	Museum of Art, 5905 Wilshire, LA	Reconfigure to 800 TA specified replacement Interleaved frequencies
1	GE MASTR II TRX	852.3125/ 807.3125	Parks & Recreation, 32132 Ridge Route Rd. Castaic	Reconfigure to 800 TA specified replacement Interleaved frequencies
1	GE MASTR II TRX	868.5875/ 823.5875	ISD, Portable Repeater, 1110 N. Eastern Ave, LA	Reconfigure to 800 TA specified replacement NPSPAC frequencies
1	GE MASTR II TRX	860.2625/ 815.2625	ISD, Mobile Repeater/Tower, 1110 N. Eastern Ave	Reconfigure to 800 TA specified replacement Interleaved frequencies
1	GE MASTR II TRX	858.2625/ 813.2625	OPS, Harbor UCLA Medical Center	Reconfigure only as directed by 800 TA
1	GE MASTR II TRX	858.2625/ 813.2625	Museum of Nat. History, 900 Exposition. LA	Reconfigure only as directed by 800 TA
1	GE MASTR II TRX	858.2625/ 813.2625	OPS, King/Drew (MLK) Med Center, South LA	Reconfigure only as directed by 800 TA
2	GE MASTR II TRX	858.2625/ 813.2625	OPS, Civic Center	Reconfigure only as directed by 800 TA
5	GE MASTR II RX	813.2625	OPS, Civic Center	Reconfigure only as directed by 800 TA
1	GE MASTR II TRX	858.2625/ 813.2625	OPS, Olive View UCLA, Sylmar	Reconfigure only as directed by 800 TA

1.8 Mutual Aid Repeaters

LA County's Mutual Aid network is an integral part of CWIRS. The system is comprised of single channel and multichannel repeater stations deployed at five sites – Oat Mountain Transmit (OAT), San Dimas Microwave (SDW), Verdugo Peak (VPK), Rolling Hills Transmit (RHT), and Blackjack Mountain (BJM).

At both OAT and SDW locations, dedicated repeater stations are employed for each of the seven mutual aid channels. Also, each site has its own dedicated combiner, multicoupler and corresponding transmit and receive antennas.

At VPK and RHT, one repeater station is dedicated to the ITAC Calling Channel (I CALL). This station utilizes a CWIRS trunked transmit combiner and receiver multicoupler. A second repeater station is configured for multichannel transmit and contains six individual receivers for operation on ITAC-1 through ITAC-4, CLEMARS, and FIREMARS. This station utilizes a dedicated transmit antenna for these six mutual aid channels and the CWIRS receiver multicoupler for receive.

Figure 21 provides a listing of Mutual Aid frequencies in use by CWIRS.

Harris worked a detailed re-banding plan in conjunction with the County to identify equipment and necessary courses of action for rebanding the 800 MHz mutual aid channels. The County of Los Angeles shall be responsible for reconfiguring the mutual aid channels.

Figure 21. LA County's 800 MHz Frequency List for Mutual Aid Stations

**Base RX Frequencies are 45 MHz below corresponding Base TX frequencies*

Channel	CWIRS Mutual Aid Frequencies
I-Call	866/ 821.0125
ITAC-1	866/ 821.5125
ITAC-2	867/ 822.0125
ITAC-3	867/ 822.5125
ITAC-4	868/ 823.0125
CLEMARS	868/ 823.5125
FIREMARS	868/ 823.9875

Figure 22 provides a listing of Mutual Aid call signs.

Figure 22. CWIRS Mutual Aid Station Call Signs

Call Sign	Service Code	Expiration Date	Licensee Name
WQQJ310	GF	07-03-2013	California, State of

Figure 23 provides a listing of Mutual Aid equipment currently in use at OAT, SDW, VPK, RHT, and BJM.

Figure 23. CWIRS 800 MHz Mutual Aid System

Qty	Description	Make	Model	Channel	Frequency (MHz)	Rebanding Requirements
OAT Mountain Transmit (OAT)						
1	Transceiver	M/A-COM	MASTR IIe	I CALL	866/ 821.0125	All MASTR IIe equipment replaced with MASTR III
1	Transceiver	M/A-COM	MASTR IIe	ITAC-1	866/ 821.5125	
1	Transceiver	M/A-COM	MASTR IIe	ITAC-2	867/ 822.0125	
1	Transceiver	M/A-COM	MASTR IIe	ITAC-3	867/ 822.5125	
1	Transceiver	M/A-COM	MASTR IIe	ITAC-4	868/ 823.0125	
1	Transceiver	M/A-COM	MASTR IIe	CLEMARS	868/ 823.5125	
1	Transceiver	M/A-COM	MASTR IIe	FIREMARS	868/ 823.9875	Replaced, but used for back-to-back operation
1	Tx Combiner	dbSpectra	DB8062F8-B	All	851-869 MHz	
1	Rx Multicoupler	RFS	RMC 80-0184-24	All	806-824 MHz	Assumed Re-tunable
San Dimas Microwave (SDW)						
1	Transceiver	M/A-COM	MASTR IIe	I CALL	866/ 821.0125	All MASTR IIe equipment replaced with MASTR III
1	Transceiver	M/A-COM	MASTR IIe	ITAC-1	866/ 821.5125	
1	Transceiver	M/A-COM	MASTR IIe	ITAC-2	867/ 822.0125	
1	Transceiver	M/A-COM	MASTR IIe	ITAC-3	867/ 822.5125	
1	Transceiver	M/A-COM	MASTR IIe	ITAC-4	868/ 823.0125	
1	Transceiver	M/A-COM	MASTR IIe	CLEMARS	868/ 823.5125	
1	Transceiver	M/A-COM	MASTR IIe	FIREMARS	868/ 823.9875	

Qty	Description	Make	Model	Channel	Frequency (MHz)	Rebanding Requirements
1	Tx Combiner	dbSpectra	DB8062F8-B	All	851-869 MHz	Replaced, but used for back-to-back operation
1	Rx Multicoupler	RFS	RMC 80-0184-24	All	806-824 MHz	Assumed Re-tunable
Verdugo Peak (VPK)						
1	Transceiver	M/A-COM	MASTR IIe	I CALL	866/821.0125	All MASTR II/IIe equipment replaced with MASTR III
1	Transceiver (6-Channel, Multi-Receiver)	M/A-COM	MASTR IIe	ITAC-4 ITAC-1 ITAC-2 ITAC-3 CLEMARS FIREMARS	868/823.0125 866.5125 867.0125 867.5125 868.5125 868.9875	
	2 nd Receiver	M/A-COM	MASTR II	ITAC-1	821.5125	
	3 rd Receiver	M/A-COM	MASTR II	ITAC-2	822.0125	
	4 th Receiver	M/A-COM	MASTR II	ITAC-3	822.5125	
	5 th Receiver	M/A-COM	MASTR II	CLEMARS	823.5125	
	6 th Receiver	M/A-COM	MASTR II	FIREMARS	823.9875	
1	CWIRS Tx Combiner #3	TXRX		I CALL	866/821.0125	
1	CWIRS Rx Multicoupler	TXRX		All	821-823 MHz	
Rolling Hills Transmit (RHT)						
1	Transceiver	M/A-COM	MASTR IIe	I CALL	866/821.0125	All MASTR II/IIe equipment replaced with MASTR III
1	Transceiver (6-Channel, Multi-Receiver)	M/A-COM	MASTR IIe	ITAC-4 ITAC-1 ITAC-2 ITAC-3 CLEMARS FIREMARS	868/823.0125 866.5125 867.0125 867.5125 868.5125 868.9875	
	2 nd Receiver	M/A-COM	MASTR II	ITAC-1	821.5125	
	3 rd Receiver	M/A-COM	MASTR II	ITAC-2	822.0125	
	4 th Receiver	M/A-COM	MASTR II	ITAC-3	822.5125	

Qty	Description	Make	Model	Channel	Frequency (MHz)	Rebanding Requirements
	5 th Receiver	M/A-COM	MASTR II	CLEMARS	823.5125	
	6 th Receiver	M/A-COM	MASTR II	FIREMARS	823.9875	
1	CWIRS Tx Combiner #3	TXRX		I CALL	866/821.0125	
1	CWIRS Rx Multicoupler	TXRX		All	821-823 MHz	
Blackjack Mountain (BJM)						
1	Transceiver	M/A-COM	MASTR II	ITAC-4	868/823.0125	All MASTR II equipment replaced with MASTR III
1	Isolator Panel	Celwave	PCD800-B	ITAC-4	868/823.0125	Assumed Re-tunable
1	Duplexer	DB Products	DB4090-A	ITAC-4	868/823.0125	Assumed Re-tunable

Attachment C

INTENTIONALLY OMITTED

Attachment D

SOFTWARE LICENSE AGREEMENT

For purposes of this *Attachment D – Software License Agreement*, the County is sometimes referred to herein as “Licensee,” and Harris is sometimes referred to as “Licensor.”

SECTION 1. DEFINITIONS:

A. “Licensed Programs” shall mean the wireless communications computer programs in software or firmware supplied under this License Agreement by Licensor in binary form to the Licensee (stand alone or in conjunction with the purchase of a Licensor wireless communications system) and as identified in Attachment 1. Licensed Programs shall also include all other material and Documentation related to the Licensed Programs supplied by Licensor to Licensee hereunder, and which may be in machine readable or printed form, including but not limited to user documentation and/or manuals. “Binary form” shall mean the executable version of the Licensed Programs.

B. “Third Party Software Products” shall mean software products included in the Licensed Programs specified in Attachment 1 which were licensed/purchased by Licensor from third parties.

SECTION 2. LICENSE GRANT FOR LICENSED PROGRAMS:

A. License Grant. Subject to the compliance by Licensee with the terms Section 2.B through 2.D of this License Agreement, Licensor hereby grants to Licensee, and Licensee hereby accepts from Licensor, (a) a personal, fully-paid, non-transferable, non-exclusive, perpetual license in North America to (a) use the Licensed Programs in binary form only and (b) install and execute such Licensed Programs on Licensee’s Hardware and (c) a fully-paid, personal, non-transferable, non-exclusive, limited sublicense in North America to use the Third Party Software Products on the Hardware and only as they are incorporated into the Licensed Programs, and not as a standalone product, in binary form only. This license does not transfer any title in the Licensed Programs. Third Party Software Products are to be used for the New System purposes only, and not to be used for purposes of development or modifications. Licensee may not use Third Party Software Products for any sublicensing, timesharing, rental, facility management, or service bureau uses. Use of the Third Party Software Products, as incorporated into the Licensed Programs, shall be restricted to the number of CPU’s equal to the respective number of CPU Licenses purchased by Licensee, as indicated in the Agreement.

B. No Alteration. With respect to the Licensed Programs, Licensee will not intentionally alter, deface, discard, or erase any media, documentation, or Licensor or Third Party Licensor’s trademarks or proprietary rights notices.

C. No Modification. Licensee will not reproduce, modify, or make derivative works of the Licensed Programs, except that Licensee may make archival inactive backup and/or disaster recovery copies of the Licensed Programs as is reasonably necessary. In addition, Licensee, its agents, consultants and/or its subcontractors will not attempt to reverse engineer, decompile, or reverse-compile any software contained in the Licensed Programs and any attempt to do so shall be a material breach of this License Agreement.

D. Use Restrictions. The Licensed Programs are for use on the New System only.

E. Additional License Terms. Third Party Software Products may be subject to additional license terms, which, if applicable, are set out in Product Specific License Terms attached hereto as Exhibit B to this License Agreement.

F. Return Upon Termination. If Licensee violates the terms of Sections 2.B. through 2.D., then Licenser, in addition to any other rights and remedies, is entitled to seek return of the Licensed Programs, including but not limited to all confidential material including all copies, partial copies, and/or modified copies (if any) of the Licensed Programs.

SECTION 3. PROTECTION AND SECURITY OF LICENSED PROGRAMS:

Licensee acknowledges and agrees that the Licensed Programs and any materials and/or documentation related thereto, and any portion thereof, supplied by Licenser hereunder are proprietary and confidential to Licenser and are a valuable commercial asset of Licenser and its third party licensors. Licensee also acknowledges and agrees that Licenser and/or the third party licensors have and shall retain all proprietary rights in their respective portions of the Licensed Programs and any materials and/or documentation related thereto. Licensee (i) shall respect such proprietary rights, (ii) shall protect Licenser and any third party licensor's proprietary rights at least to the extent that it protects its own proprietary information, (iii) shall not use the Licensed Programs nor any materials or documentation related thereto except for the purposes for which they are being made available as set forth in this License Agreement and (iv) shall not reproduce, print, disclose, or otherwise make said Licensed Programs or materials and/or documentation related thereto available to any third party, in whole or in part, in whatever form, except as permitted in the terms of this License Agreement.

SECTION 4. LICENSE FEES:

The license fees to be paid by SprintNextel on behalf of the County are set forth in the terms and provisions of the Agreement.

SECTION 5. WARRANTY:

A. Licenser Warranty. Seller warrants, for a period of ninety (90) calendar days commencing with the date of Licensee's acceptance of the New System, that any Licensed Program furnished to Licensee under this License Agreement shall be capable of successfully operating on the Designated Equipment in accordance with the logic defined in the Operator's Manuals and Documentation when the New System is supplied with correct input data. If with the warranty period any Licensed Program does not meet this warranty, Licenser will, at its option, either correct the defect or error in the Licensed Program, free of charge, or make available to Licensee a substitute program. The foregoing warranty is exclusive and in lieu of all other warranties whether written, oral, implied or statutory. No implied or statutory warranty of merchantability or fitness for a particular purpose shall apply. If there is any conflict between the terms of the Agreement and this License Agreement as to the Licensed Programs, the terms of the Agreement will prevail and govern.

B. Third Party Licensed Programs Warranty. Licensed Programs which have been developed or are owned by a third party licensor and which are sublicensed by Licenser to Licensee hereunder shall be warranted to Licensee only to the extent that the licensor of such sublicensed programs warrants such sublicensed programs to Licenser.

C. **Warranty Remedy.** In the event that the Licensed Programs do not conform to the representation above, Licensee's sole remedy and Licensor's sole and exclusive liability shall be to replace such Licensed Programs with the then current released version of such Licensed Programs.

SECTION 6. [INTENTIONALLY OMITTED]

SECTION 11. EXHIBITS.

All Exhibits attached to this License Agreement are considered part of this License Agreement and are incorporated by reference.

SECTION 12. EXPORT REGULATIONS.

Licensee agrees to comply with all export and re-export restrictions and regulations imposed by the U.S. Government.

SECTION 13. 800 MHz SYSTEM REBANDING AGREEMENT.

This *Attachment D - Software License Agreement* is part of the 800 MHz System Rebanding Agreement.

EXHIBIT B: SOFTWARE LICENSE AGREEMENT
Attachment 1

1.0 Listing of Licensed Programs:

Item	Device	Software Description
1.	Mobile Radio	Trunking Protocol mobile device software for OpenSky, P25 and EDACSIP applications
2.	Mobile Radio	Conventional FM mobile device software for OpenSky, P25 and EDACSIP applications
3.	Portable Radio	Trunking Protocol portable device software for OpenSky, P25 and EDACSIP applications
4.	Portable Radio	Conventional FM portable device software for OpenSky, P25 and EDACSIP applications
5.	OpenSky Base Station	OpenSky Trunking Protocol base station
6.	OpenSky Base Station	OpenSky Conventional FM base station software
7.	P25 Base Station	DSP and SitePro application software for P25 trunked and conventional base station applications
8.	Dispatch Console	MaestroIP and VIP application software for OpenSky, P25 and EDACSIP applications.
9.	Telephone Interconnect	Telephone Interconnect software for OpenSky, P25 and EDACSIP applications.
10.	Interoperability Gateway	VIDA Conventional and NetworkFirst application software for OpenSky, P25 and EDACSIP applications.
11.	Key Management	Network Key Management, Key Loader, and Key Administration application software for P25 applications
12.	Data Gateway	PMIPS Data Gateway application software for P25 and EDACSIP applications.
13.	Site Management	Network Sentry application software (including SMI, SMAC, and OS) and SiteLink application software for P25 and EDACSIP applications.

14.	Network Switching Center	VNIC, HA, MDIS, RNM/CNM, UAS, and RSM software for OpenSky, P25 and EDACSIP applications.

EXHIBIT B: SOFTWARE LICENSE AGREEMENT
Attachment 2

Product Specific License Terms

Adaptive Server® Enterprise 12.5.2 (Small Business Edition, all platforms)
("Program")

In addition to the license terms set out in the SOFTWARE LICENSE Agreement, the following additional OR DIFFERENT rights and accompanying obligations AND RESTRICTIONS shall apply to the Program for WHICH Licensee has purchased a license.

The Program contains or is provided with component software products from both Sybase and third parties. Except as otherwise specifically authorized below, or by third parties as identified below, use of all components is limited to use in the same manner and capacity for which the Program as a whole is licensed. Additional licenses may be available from Sybase for a fee.

I. Terms Applicable to the Small Business Editions of the Program. This Program is limited to use on a single Machine with a maximum capacity (as specified by the manufacturer) of four (4) CPU's or less.

II. Developer Components. The Program contains or is provided with the Developer Components identified below. The Developer Components are licensed without further charge for Use by one Standalone Seat for the sole purpose of testing and developing applications in a non-production environment. No production or commercial use is permitted. Use and distribution of the Distributable Components (as specified in and subject to the limitations in the Documentation) of the Developer Components is permitted without charge. Partner may Use and modify the source code version of those portions of the Developer Components that are provided as sample code (if any) for its internal use only.

Developer Components
Software Developers Kit
InfoMaker® (not included on Mac OS X)
Physical Architect™ (not on Mac OS X)

III. Restricted Use Components. The Program may contain or be provided with the Restricted Use Components identified below (depending on the platform licensed). If included, Partner is licensed without further charge to Use only one (1) copy of each Restricted Use Component on one (1) Machine. Partner may Use the Restricted Use Components solely in conjunction with its use of the Program, and subject to any Additional Restrictions set forth below.

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Deal Number (to be provided by Sprint Nextel): _____

Vendor Name (as listed on Schedule C of FRA or PFA):_____

Vendor Invoice Number(s): _____

Incumbent Contact Person: _____

Incumbent Contact Address: _____

Contact Person Phone Number: _____

Contact Person Fax Number: _____

Type of Good/Services Delivered (Quantity and Price as identified on Schedule C of the FRA or PFA)	Date of Acceptance of Good/Services by Incumbent	Cost
	TOTAL	

I, _____ (“Incumbent”) acknowledge that all goods/services identified on the Invoice number referenced above and attached to this acknowledgement have been received/performed.

BY: _____

Name: _____

Title:

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